REPORT OF THE

Hydro-Electric Power Commission

OF ONTARIO

1918

VOL. III.

WILLS MACLACHLAN, Esq.

Eleventh Annual Report

OF THE

HYDRO-ELECTRIC POWER COMMISSION

OF THE

PROVINCE OF ONTARIO

FOR THE YEAR ENDED OCTOBER 31st

1918

VOLUME III

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To His Honour, Colonel Sir John Hendrie, K.C.M.G., C.V.O.,

Lieutenant-Governor of Ontario.

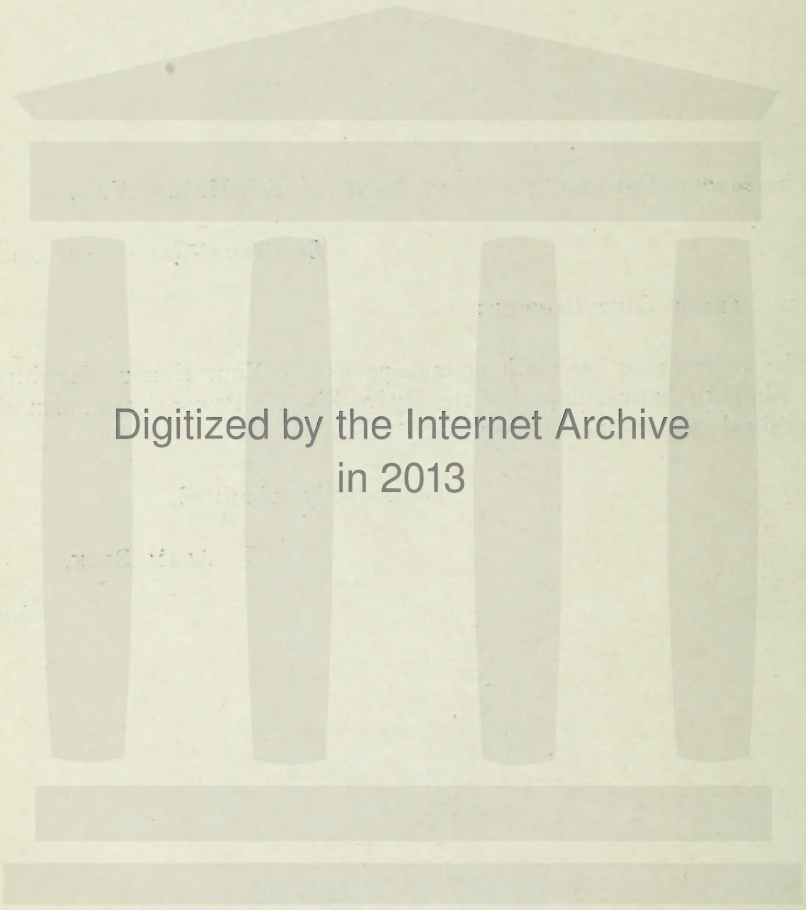
May it Please Your Honour:

The undersigned has the honour to present to Your Honour the third volume of the Eleventh Annual Report of the Hydro-Electric Power Commission of Ontario for the fiscal year ending October 31st, 1918.

Respectfully submitted,

Adam Beck,

Chairman.



TORONTO, ONT., February 25th, 1919.

COLONEL SIR ADAM BECK, K.B., LL.D.,

Chairman, Hydro-Electric Power Commission of Ontario,

Toronto, Ontario.

SIR,—I have the honour to transmit herewith the third volume of the Eleventh Annual Report of the Hydro-Electric Power Commission of Ontario for the fiscal year ending October 31st, 1918.

I have the honour to be,

Sir,

Your obedient servant,

W. W. POPE,

Secretary.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

COLONEL SIR ADAM BECK, K.B., LL.D.

HONOURABLE I. B. LUCAS, M.P.P.

COLONEL W. K. McNAUGHT, C.M.G.

W. W. POPE, Secretary.

F. A. GABY, Chief Engineer.

HYDRAULIC INVESTIGATIONS

STREAM FLOW MEASUREMENTS

The results of the measurements of flow of streams in the province during the year October 1, 1917 to September 30, 1918 are published herewith.

There are forty-eight stations in the Province at which systematic determination of stream flow is made.

During the year, there arose the necessity of rearranging the organization of the hydrometric branch to bring the expenditure within the amount designated as allowable for the work. This resulted in the closing of the district office at Kenora from which had been conducted the investigations on rivers tributary to Rainy Lake, the Winnipeg and English Rivers. This office was amalgamated with the North Bay office and the least possible reduction was made in the staff of gauge readers, enabling the publication of estimates of flow at some of the metering sections in that district. As no discharge measurements during the ice season were made, however, estimates of flow for sections subject to variation from ice effect have not been made for that part of the year when the sections were thus affected.

In many parts of the Province the winter season of 1917-1918 was abnormal in the matter of low temperature and the length of time without a thaw. The break up in the spring of 1918 was also exceptional as the rise of temperature came when more than the usual quantity of ice was on the rivers and it was carried along and broken before losing strength. This was the cause of greater jams on the rivers than is usually the case, more particularly in the south-western sections of the province.

While the important rivers from a power or a statistical point of view in the part of the Province south and east of North Bay may be considered as satisfactorily under observation, the same can not be said of the far larger remaining portion. The most desirable locations for measurement of stream flow are not easily accessible, and distances and means of transportation are such that much time and money are spent in reaching sections that take very little time in observation.

There is published herewith a table giving percentages of run-off to rainfall. The number of stations at which rainfall is continuously observed in some of the drainage basins is not large, and the percentages shown are sometimes based on the records of only one station in a large area, so that the rainfall recorded at such a station may differ very materially from the true mean for the area in question.

Regular Stations

EASTERN ONTARIO DISTRICT

River	Location	Drainage Area Sq. Miles	Township	County or District
Black	near Washago	585	Rama	Ontario
Bonnechere	at Renfrew	910	Horton	Renfrew
Madawaska	at Madawaska	800	Murchison	Nipissing
Maganatawan, north.	near Burk's Falls	107	Armour	Parry Sound
" south.	" " "	257	"	"
Mississippi	at Ferguson's Falls	1,042	Drummond	Lanark
"	at Galetta	1,456	Fitzroy	Carleton
"	near Snow Road	446	Sherbrooke	Lanark
Moira	near Foxboro	1,038	Thurlow	Hastings
Muskoka, south	at Black's Bridge	668	Draper	Muskoka
" north	near Port Sydney	560	Stephenson	"
Napanee	near Napanee	300	Camden	Addington
Petawawa	near Petawawa	1,572	Petawawa	Renfrew
Tay	near Glen Tay	204	Bathurst	Lanark
York	near Bancroft	374	Faraday	Hastings

Black River near Washago

Location—At the highway bridge known as Kennedy's Bridge, about 5 miles south-east of the Town of Washago, on lot 1, concession G, Township of Rama, County of Ontario.

Records Available—Discharge measurements at first bridge from August, 1913, to January, 1914. Discharge measurements at Kennedy's Bridge from February, 1914, and daily gauge heights from May 5, 1915.

Drainage Area—585 square miles.

Gauge—A bench mark (elevation 30.00), painted on tie-rod on downstream side of bridge, is used in ascertaining the water elevation, by measuring down to the surface of the stream with a graduated staff. This is referred to a bench mark (elevation 32.62) on north west corner of right abutment.

Channel and Control—The channel is straight for 150 feet above and 700 feet below the gauging section. The banks and control can be considered permanent, as the velocity here is never very high. The bed of the stream is composed of rock.

Discharge Measurements—Made from the bridge and wading section 500 feet above bridge at low water.

Winter Flow—Owing to the somewhat sluggish flow at this section, ice from December to March forms to a great thickness, and relation of gauge height to discharge is seriously affected during that period. Measurements are made to determine the winter flow.

Regulation—The flow at this section during May, June and July is controlled to a large extent by logging dams above. The operation of gates at these dams causes fluctuations in gauge heights, amounting to several feet at the gauge. At times logs lodge below section, causing considerable backwater.

Accuracy—For three months in the early summer the river stage is subject to large fluctuations, and the accuracy of the discharge depends upon accuracy of mean daily gauge heights. Rating curve not well defined at all stages.

Observer—Pearl Carrick, Washago.

Discharge Measurements of Black River near Washago in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Nov. 27....	Ronald, F.....	105	508	.59	21.84	298 (a)	.....
Dec. 19...	"	102	496	.66	21.96	326 (a)	.....
1918							
Feb. 26....	"	59	130	1.48	22.29	193 (a)	.....
April 12....	"	137	1,165	2.89	26.83	3,365	.....
April 19....	"	119	834	2.13	24.67	1,775	.....
May 20....	McLennan, C. C .	119	723	1.56	23.68	1,126	.....
July 18....	Ronald, F.....	119	470	.61	21.50	289	.....
Aug. 19....	"	51	79	1.96	20.83	155	.....
Sept. 6....	"	50	88	2.27	21.00	200	.....

(a) Ice measurement.

Daily Gauge Height in feet, and Discharge in second-feet of Black River near Washago, for 1917-8

Drainage Area 585 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	20.15	78	23.44	955	21.71	264	21.63	220	21.46	110	22.57	255	28.13	4430	23.42	940	23.42	940	21.84	316	20.94	149	20.56	108
2	20.17	79	23.38	920	21.92	306	21.65	220	21.50	110	22.59	260	28.73	4910	23.58	1040	23.58	1040	22.00	358	20.90	144	20.79	131
3	20.17	79	23.07	760	22.17	366	21.63	213	21.50	106	22.59	260	29.02	5150	23.71	1110	23.94	1260	21.96	348	20.85	138	20.71	123
4	20.25	83	23.00	725	22.17	361	21.57	199	21.46	98	22.59	260	28.81	4980	23.71	1110	23.52	1000	21.85	319	20.79	131	20.63	115
5	20.50	102	22.90	680	22.17	355	21.55	193	21.40	92	22.57	255	28.69	4880	23.71	1110	23.23	840	21.73	291	20.69	121	20.60	112
6	20.50	102	22.75	620	22.02	311	21.59	196	21.34	88	22.59	260	28.60	4810	23.29	870	23.25	850	21.58	258	20.67	119	20.92	146
7	20.50	102	22.65	580	21.96	293	21.59	193	21.46	98	22.57	255	28.46	4700	23.29	870	23.50	990	21.50	240	20.65	117	21.29	202
8	20.55	107	22.38	473	22.07	314	21.59	190	21.50	102	22.54	249	28.27	4540	23.23	840	23.02	735	21.48	236	20.60	112	21.19	186
9	20.55	107	22.29	441	22.00	293	21.63	193	21.59	111	22.52	244	28.02	4340	22.96	710	22.62	565	21.44	229	20.54	106	26.10	172
10	20.40	92	22.27	435	22.02	293	21.59	183	21.59	111	22.59	260	27.63	4020	23.21	830	22.71	600	21.48	236	20.63	115	21.04	162
11	20.29	85	22.27	435	22.00	284	21.59	180	21.57	109	22.54	249	27.25	3720	23.40	930	22.40	480	21.52	244	20.60	112	21.02	159
12	20.35	89	22.25	429	21.98	275	21.59	177	21.52	104	22.59	260	26.75	3310	23.42	940	22.40	480	21.50	240	20.56	108	21.00	156
13	20.48	100	22.17	406	21.82	236	21.59	174	21.71	123	22.67	277	26.45	3070	23.54	1010	22.50	520	21.46	233	20.52	104	21.21	190
14	21.02	159	22.13	394	21.92	253	21.59	170	21.71	123	22.67	277	26.00	2720	23.42	940	22.65	580	21.46	233	20.56	108	21.65	273
15	21.11	174	22.04	369	22.13	295	21.59	167	21.65	117	22.71	286	25.64	2450	23.46	965	22.67	585	21.48	236	20.50	102	22.04	369
16	21.11	174	21.98	353	22.29	329	21.59	164	21.67	119	22.77	299	25.14	2080	23.63	1070	22.21	417	21.48	236	20.50	102	22.17	406
17	21.13	177	22.00	358	22.17	324	21.59	161	21.61	113	22.79	304	24.88	1890	23.65	1080	22.44	495	21.52	244	20.46	98	22.19	411
18	21.13	177	21.96	348	22.15	345	21.61	161	21.59	111	22.82	311	24.79	1830	23.58	1040	22.73	610	21.52	244	20.94	149	22.21	417
19	21.17	183	21.92	337	21.84	293	21.55	150	21.90	144	22.88	327	24.71	1770	23.50	990	22.65	580	21.46	233	20.85	138	22.10	386
20	21.94	342	21.92	337	21.76	297	21.59	152	21.84	137	23.10	386	24.65	1730	23.67	1090	22.50	520	21.44	229	20.77	129	22.02	364
21	22.21	417	22.04	369	21.78	297	21.59	150	21.92	146	23.53	740	24.54	1650	23.73	1130	22.38	473	21.33	209	20.67	119	21.96	348
22	22.15	400	22.00	358	21.84	306	21.55	143	22.09	170	24.28	1480	24.56	1660	24.10	1360	22.38	473	21.10	172	20.58	110	21.85	319
23	22.07	378	21.79	304	21.86	306	21.61	148	22.13	177	25.21	2140	24.53	1640	23.94	1260	22.52	525	21.04	162	20.54	106	21.79	304
24	21.94	342	21.87	324	21.86	302	21.50	132	22.09	170	25.84	2600	24.31	1490	23.69	1100	22.46	505	21.02	159	20.50	102	21.75	295
25	22.00	358	22.07	378	21.84	293	21.50	130	22.09	170	26.24	2910	24.43	1570	23.69	1100	22.38	473	21.00	156	20.56	108	21.79	304
26	22.32	451	21.88	327	21.84	288	21.48	126	22.33	209	26.42	3050	24.17	1400	23.75	1140	22.15	400	21.00	156	20.67	119	21.67	277
27	22.67	585	21.77	295	21.77	269	21.52	128	22.38	218	26.34	2989	23.92	1240	23.85	1200	22.08	380	21.02	159	20.60	112	21.65	273
28	23.25	850	21.71	277	21.75	260	21.46	120	22.57	255	26.40	3030	23.84	1190	23.85	1200	21.92	337	21.00	156	20.50	102	21.62	266
29	23.25	850	21.71	273	21.69	242	21.46	118	.....	....	26.40	3030	23.73	1130	24.04	1320	21.88	327	21.02	159	20.40	92	21.62	266
30	23.25	850	21.71	269	21.71	242	21.42	112	.....	....	26.90	3430	23.71	1110	23.46	965	21.96	348	21.00	156	20.48	100	21.54	249
31	23.40	930	.....	.....	21.65	227	21.45	113	.....	....	27.44	3870	.....	....	23.36	910	.....	....	20.98	154	20.54	106	.....	....

Monthly Discharge of Black River near Washago for the year ending Sept. 30th, 1918

Drainage Area, 585 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)..	930	78	290	1.59	.13	.50	.58
November " ..	955	269	451	1.63	.46	.77	.86
December " ..	366	227	294	.63	.39	.50	.58
January .. (1918)	220	112	164	.38	.19	.28	.32
February	255	88	134	.44	.15	.23	.24
March	3,870	244	1,122	6.62	.42	1.92	2.21
April	5,150	1,110	2,854	8.80	1.90	4.88	5.44
May	1,360	710	1,038	2.32	1.21	1.77	2.04
June.....	1,260	327	611	2.15	.56	1.04	1.16
July	358	154	226	.61	.26	.39	.45
August	149	92	115	.25	.16	.20	.23
September	417	108	250	.71	.18	.43	.48
The year.....	5,150	78	629	8.80	.13	1.08	14.59

Bonnechere River at Renfrew

Location—One-half mile below Raglan St., Town of Renfrew, Township of Horton, County of Renfrew, on the Barnett Estate.

Records Available—Discharge measurements from September, 1916. Daily gauge readings from November 1, 1916.

Drainage Area—910 square miles.

Gauge—On the right bank of the river at the section, a box chain gauge with nine feet of standard gauge plates. Distance from end of weight to marker is 12.43 feet.

Channel and Control—The channel is straight for 100 feet above and 300 feet below the station, but both above and below the station long sharp curves occur. There is a low clay bank on the right, and a high clay bank on the left. At extreme high water there may be an escape from this channel of some water from higher above the section to points below the section. The bed of the stream is composed of clean small stones.

Regulation—The Round Lake Dam, the Golden Lake Dam for power purposes, and the dams on the upper river for lumbering purposes have large regulating effects on this river. The power plants in Renfrew, running twenty-four hours to their full capacity, and having little pondage, will not seriously affect the estimate of mean gauge heights.

Observer—R. Dalton, Renfrew.

Discharge Measurements of Bonnechere River at Renfrew in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 15....	Hatton, M	121	186	1.74	102.89	324	.....
Nov. 20....	Ronald, F.....	121	179	1.68	102.79	282	.....
1918							
Jan. 14....	Hatton, M.....	120	170	1.59	103.04	270(a)	.....
Feb. 20....	Ronald, F	118	179	1.83	103.00	328(a)	.....
April 3....	"	121	863	3.19	104.60	2,757	.....
May 14....	"	131	266	3.11	103.35	828	.....
Aug. 9....	Hatton, M	123	182	1.74	102.85	317	.....
Sept. 13....	Ronald, F	120	170	1.62	102.75	276	.....

(a) Ice measurement.

Daily Gauge Height in feet, and Discharge in second-feet of Bonnechere River at Renfrew for 1917-8

Drainage Area, 910 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	102.90	345	102.89	340	102.92	328	103.33	437	103.25	378	102.67	200	104.83	3160	103.00	410	103.67	1200	103.17	575	103.00	410	102.75	270
2	102.90	345	102.83	300	102.62	219	103.38	482	103.17	328	102.42	167	105.17	3750	103.00	410	103.33	750	103.17	575	102.92	358	102.67	242
3	102.85	318	102.79	286	102.52	193	103.25	378	102.75	198	102.25	152	104.67	2880	102.92	358	103.33	750	103.08	482	102.92	358	102.75	270
4	102.90	345	102.67	242	102.33	180	103.17	328	103.17	328	102.50	190	104.17	2000	103.00	410	103.33	750	102.92	358	102.92	358	102.75	270
5	102.83	306	102.81	296	102.29	164	103.17	328	103.29	404	102.42	179	103.83	1440	102.83	306	103.25	660	102.92	358	102.92	358	102.75	270
6	102.81	296	102.79	286	102.75	238	102.58	174	103.42	520	102.42	179	103.75	1320	102.92	358	103.17	575	102.83	306	102.92	358	102.75	270
7	102.71	254	102.77	278	102.93	306	103.17	328	103.42	520	102.42	179	103.75	1320	102.92	358	103.08	482	102.75	270	102.92	358	102.66	240
8	102.69	248	102.75	270	102.93	306	103.25	378	103.50	605	102.42	179	103.83	1440	102.92	358	103.08	482	102.83	306	102.92	358	102.92	358
9	102.77	278	102.73	262	102.40	170	103.17	328	103.42	520	102.42	179	103.75	1320	103.00	410	103.00	410	102.83	306	102.92	358	102.67	242
10	102.77	278	102.71	254	102.65	205	103.00	250	102.62	186	102.42	179	103.83	1440	103.00	410	103.00	410	102.83	306	102.92	358	102.67	242
11	102.75	270	102.60	225	102.42	173	103.08	282	103.33	437	102.50	190	103.75	1320	103.08	482	103.08	482	102.83	306	102.83	306	102.67	242
12	102.79	286	102.92	358	102.42	173	103.08	282	103.50	605	102.58	202	103.67	1200	103.17	575	103.08	482	102.75	270	102.67	242	102.67	242
13	102.81	296	102.89	340	102.54	189	102.83	211	103.42	520	102.58	202	103.67	1200	103.25	660	103.00	410	102.83	306	102.83	306	102.75	270
14	102.66	240	102.89	340	102.67	209	103.17	328	103.42	520	102.42	179	103.58	1070	103.33	750	103.08	482	102.67	242	102.83	306	102.83	306
15	102.81	296	102.75	270	102.75	215	103.17	328	103.25	378	102.58	202	103.50	960	103.33	750	102.92	358	102.75	270	102.92	358	102.58	221
16	102.79	286	102.75	270	102.67	200	103.08	282	103.25	378	102.50	190	103.58	1070	103.33	750	102.92	358	102.75	270	102.67	242	102.58	221
17	102.79	286	102.79	286	102.67	200	103.08	282	103.00	290	102.17	153	103.58	1070	103.33	750	103.17	575	102.67	242	102.92	358	102.58	221
18	102.75	270	102.60	225	102.50	176	103.08	282	103.00	290	102.58	202	103.58	1070	103.33	750	103.17	575	102.79	286	102.67	242	102.67	242
19	102.71	254	102.81	296	102.50	176	103.00	250	103.00	290	102.58	202	103.58	1070	103.33	750	103.17	575	102.75	270	102.92	358	102.42	193
20	102.75	270	102.83	306	102.58	187	102.83	211	102.92	258	102.42	179	103.67	1200	103.75	1320	103.08	482	102.75	270	102.75	270	102.50	205
21	.....	270	102.67	242	102.58	180	102.92	230	102.92	258	102.75	238	103.58	1070	103.42	860	103.08	482	102.75	270	102.92	358	102.67	242
22	.....	274	102.75	270	102.08	132	103.00	250	102.83	232	102.42	193	103.42	860	103.42	860	103.25	660	103.00	410	102.67	242	102.67	242
23	102.77	278	102.83	306	102.25	147	102.83	211	102.92	258	103.25	660	103.33	750	103.33	750	103.08	482	102.83	306	102.75	270	103.00	410
24	102.74	266	102.87	328	102.17	140	102.67	186	102.67	200	103.42	860	103.25	660	103.50	960	103.00	410	102.75	270	102.58	221	102.67	242
25	102.75	270	102.77	278	102.33	154	103.08	282	102.92	258	103.58	1070	103.25	660	103.42	860	103.17	575	102.67	242	102.67	242	102.58	221
26	102.75	270	102.92	358	102.42	162	103.17	328	102.83	232	103.33	750	102.75	270	103.50	960	102.92	358	102.67	242	102.50	205	102.58	221
27	102.77	278	103.00	378	101.83	105	102.58	174	102.92	258	103.00	410	102.83	306	103.50	960	103.08	482	102.92	358	102.75	270	103.00	410
28	102.73	262	102.58	211	102.50	165	102.83	211	102.83	232	103.00	410	103.00	410	103.67	1200	103.08	482	102.75	270	102.67	242	103.00	410
29	102.94	371	102.92	328	103.33	437	102.92	230	.....	...	103.33	750	103.00	410	103.42	860	103.08	482	102.75	270	102.58	221	102.83	306
30	102.92	358	103.00	378	102.75	198	103.08	282	.....	...	103.79	1380	103.08	482	103.42	860	102.83	306	102.92	358	102.83	306	102.67	242
31	102.92	358	.....	...	103.25	378	103.25	378	.....	...	103.92	1580	.....	....	103.33	750	.....	...	102.92	358	102.75	270	.....	....

Monthly Discharge of Bonnechere River at Renfrew for Year ending Sept. 30th, 1918

Drainage Area, 910 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	371	240	291	.41	.26	.32	.37
November "	378	211	293	.42	.23	.32	.36
December "	437	105	207	.48	.12	.23	.27
January (1918)	482	174	287	.53	.19	.32	.37
February	605	186	353	.66	.20	.39	.41
March	1,580	152	387	1.74	.17	.43	.50
April	3,750	270	1,239	4.12	.30	1.36	1.52
May	1,320	306	684	1.45	.34	.75	.86
June	1,200	306	532	1.32	.34	.58	.65
July	575	242	320	.63	.27	.35	.40
August	410	205	305	.45	.23	.34	.39
September	410	193	266	.45	.21	.29	.32
The year	3,750	105	429	4.12	.12	.47	6.38

Madawaska River at Madawaska

Location—50 feet above the G.T. Ry. bridge, Canada Atlantic branch, 500 yards east of the Madawaska Station, Township of Murchison, District of Nipissing.

Records Available—Discharge measurement from September, 1915, and monthly thereafter, and gauge readings from September 27, 1915.

Drainage Area—800 square miles.

Gauge—0-3 feet of standard gauge plates secured vertically to pile, three feet west of face of east abutment. 3-9 feet of standard gauge plates secured vertically to approach to east abutment.

Channel and Control—Channel is straight for about 400 feet above the section, curving slightly to the right under the bridge. The banks are sandy, and not liable to overflow. The bed of the river is soft, and there are some weeds above the section. The point of control is not clearly defined.

Discharge Measurements—Made about fifty feet above gauge from a boat.

Winter Flow—Affected by ice conditions.

Regulation—Lumber interests on the river above the section operate dams for driving purposes.

Accuracy—Open water rating curve for ordinary stages changing slightly.

Observer—G. Wormke, Madawaska.

Discharge Measurements of Madawaska River at Madawaska in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 26....	Ronald, F.....	78	513	.65	102.08	336	.....
1918							
Feb. 22....	"	40	95	1.77	102.44	168 (a)	.....
Apr. 5....	"	101	916	1.68	106.17	1,540	.....
" 5....	"	101	916	1.72	106.17	1,576	.....
" 8....	Hatton, M.....	101	926	1.76	106.27	1,638	.....
May 16....	Ronald, F.....	100	859	1.77	106.09	1,517	.....
July 16....	"	86	561	.81	102.58	456	.....
Aug. 21....	Hatton, M.....	78	494	.59	101.90	289	.....
Sept. 12....	Ronald, F.....	80	523	.87	102.35	455	.....

(a) Ice measurement taken 700 feet above regular section.

Daily Gauge Height in feet, and Discharge in second-feet, of Madawaska River at Madawaska for 1917-8

Drainage Area, 800 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	101.33	209	102.08	333	101.69	250	.....	.....	.....	.....	.....	.....	106.13	1370	106.00	1500	106.00	1500	102.37	405	102.25	379	101.83	293
2	101.35	212	102.08	333	101.60	236	.....	.....	.....	.....	.....	.....	107.75	1980	106.00	1500	105.83	1440	102.85	520	102.25	379	101.83	293
3	101.33	209	102.08	333	101.52	223	.....	.....	.....	.....	.....	.....	108.09	2110	105.33	1250	105.46	1300	103.00	555	102.25	379	101.94	314
4	101.40	220	102.08	333	101.67	247	.....	.....	.....	.....	102.75	197	106.96	1860	105.33	1250	105.04	1150	102.92	535	102.25	379	102.04	334
5	101.42	223	102.08	333	101.63	241	.....	.....	.....	.....	102.95	228	106.17	1560	104.83	1080	104.83	1080	102.73	490	102.13	353	102.62	464
6	101.35	212	101.96	312	101.50	220	.....	.....	.....	.....	102.91	222	106.40	1650	104.66	1020	104.60	1000	102.67	476	102.08	343	103.04	565
7	101.33	209	101.83	290	101.52	207	.....	.....	.....	.....	102.62	179	106.15	1560	104.70	1040	104.46	960	102.31	392	102.04	334	102.83	515
8	101.33	209	101.83	290	101.60	212	.....	.....	.....	.....	102.54	169	106.25	1600	104.81	1070	104.25	895	102.24	377	102.02	330	102.54	445
9	101.25	197	101.83	290	101.73	225	.....	.....	.....	.....	103.00	236	106.32	1620	104.85	1090	104.09	850	102.54	445	102.29	388	102.50	435
10	101.21	191	101.81	287	101.83	233	.....	.....	.....	.....	102.95	228	106.21	1580	105.21	1210	104.04	835	102.83	515	102.33	397	102.37	405
11	101.20	190	101.71	270	101.92	239	.....	.....	.....	.....	102.78	201	106.15	1560	105.81	1430	104.00	825	102.90	530	102.33	397	102.33	397
12	101.27	200	101.67	263	101.92	231	.....	.....	.....	.....	102.45	158	106.00	1500	105.95	1480	104.07	845	102.90	530	102.27	383	102.33	397
13	101.33	209	101.67	263	102.04	242	.....	.....	.....	.....	102.33	144	106.00	1500	106.08	1530	104.04	835	102.62	464	102.17	362	102.40	412
14	101.33	209	101.56	246	102.09	250	.....	.....	.....	.....	102.75	197	106.00	1500	106.25	1600	103.08	575	102.56	449	102.17	362	102.67	476
15	101.33	209	101.50	236	102.08	249	.....	.....	.....	.....	102.91	222	106.00	1500	106.33	1630	102.39	410	102.46	426	102.17	362	102.96	545
16	101.25	197	101.50	236	102.08	249	.....	.....	.....	.....	103.10	252	106.00	1500	106.21	1580	102.21	370	102.42	417	102.08	343	103.08	575
17	101.21	191	101.52	239	102.08	249	.....	.....	.....	.....	103.06	246	106.00	1500	106.45	1670	102.19	366	102.42	417	102.08	343	103.21	610
18	101.21	191	101.44	226	102.08	249	.....	.....	.....	.....	103.04	242	106.00	1500	106.58	1720	102.17	362	102.42	417	102.02	330	103.02	560
19	102.38	387	101.42	215	102.08	249	.....	.....	.....	.....	103.06	249	106.25	1600	106.39	1650	102.11	349	102.42	417	102.00	326	103.12	585
20	103.25	560	101.42	215	102.09	250	.....	.....	.....	.....	103.08	249	106.17	1560	106.33	1630	102.09	345	102.40	412	101.92	310	104.42	945
21	102.75	459	101.42	215	102.00	236	.....	.....	.....	.....	102.94	226	106.34	1630	106.12	1550	102.09	345	102.35	401	101.91	308	104.08	845
22	102.59	427	101.42	215	101.88	217	.....	.....	.....	.....	103.55	328	106.46	1670	106.08	1530	102.28	386	102.29	388	101.83	293	103.75	755
23	102.31	375	101.54	226	101.64	182	.....	.....	.....	.....	103.79	371	106.42	1660	106.04	1520	102.46	426	102.25	379	101.83	293	103.56	700
24	102.19	353	101.67	247	101.50	164	.....	.....	.....	.....	103.68	351	106.46	1670	105.83	1440	102.38	408	102.25	379	101.83	293	103.40	660
25	102.10	337	101.56	230	101.42	154	.....	.....	.....	.....	103.96	402	106.25	1600	105.83	1440	102.37	405	102.25	379	101.83	293	103.21	610
26	102.08	333	101.50	220	101.21	129	.....	.....	.....	.....	104.00	409	106.17	1560	105.73	1400	102.34	399	102.23	375	101.83	293	103.19	605
27	102.08	333	101.50	220	.....	.....	.....	.....	.....	.....	104.00	409	106.17	1560	106.04	1520	102.25	379	102.25	379	101.83	293	103.58	705
28	102.10	337	101.56	230	.....	.....	.....	.....	.....	.....	103.92	493	106.17	1560	106.16	1560	102.27	383	102.25	379	101.83	293	103.67	730
29	102.08	333	101.58	233	.....	.....	.....	.....	.....	.....	104.13	590	106.05	1520	106.16	1560	102.27	383	102.29	388	101.90	306	103.58	705
30	102.08	333	101.59	234	.....	.....	.....	.....	.....	.....	104.50	735	105.92	1470	106.16	1560	102.25	379	102.35	401	101.83	293	103.58	705
31	102.08	333	.....	.....	.....	.....	.....	.....	.....	.....	105.09	955	.....	.....	106.08	1530	.....	.....	102.35	401	101.83	293	.....	.....

NOTE.—Gauge frozen in from Dec. 27th to Mar. 3rd. Metering taken Feb. 22nd shows 168 cfs. Probably over period from Dec. 27th to Mar. 3rd flow was in the neighborhood of 150 cfs.

Monthly Discharge of Madawaska River at Madawaska for year ending Sept. 30th, 1918

Drainage Area, 800 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October ...(1917)	560	190	277	.70	.24	.35	.40
November. ''	333	215	260	.42	.27	.32	.36
December ''	250	129	224	.31	.16	.28	.32
January ..(1918)	.....	.....	.....	.....	.....	.....	.....
February.....	.....	.....	.....	.....	.....	.....	.....
March	955	144	317	1.19	.18	.40	.46
April.....	2,110	1,370	1,600	2.64	1.71	2.00	2.23
May.....	1,720	1,020	1,437	2.15	1.28	1.80	2.08
June.....	1,500	345	673	1.88	.43	.84	.94
July.....	555	375	433	.69	.47	.54	.62
August	397	293	336	.50	.37	.42	.48
September.....	945	293	553	1.18	.37	.69	.77
The period.....	2,110	129	611	2.64	.16	.76	10.37

Maganatawan River (North Branch) near Burk's Falls

Location—One-half mile north of Burk's Falls station, 200 feet upstream from the Grand Trunk Railway bridge, on lot 7, concession 10, Township of Armour, District of Parry Sound.

Records Available—Monthly discharge measurement from June, 1915. Daily gauge readings from August 1, 1915.

Drainage Area—107 square miles.

Gauge—Vertical steel staff with enamelled face fastened to a 2 x 4 scantling and connected to a wooden platform on the right shore about 250 feet above G.T.R. bridge. Zero of the gauge (elev. 28.14 feet) is referred to a bench mark (elev. 35.00 feet) painted on top of 5-ft. iron pipe 20 feet above gauging station, and a bench mark (elevation 49.53) painted on upstream side of left abutment of G.T.R. bridge.

Channel and Control—Straight for about 200 feet above and 100 feet below the gauging station to the falls. The banks are high and wooded, and are not liable to overflow. The bed of the stream is composed of clay and a few rocks, practically permanent. The velocity is moderate.

Discharge Measurements—Made by wading with a small Price current meter, in high water just above gauge, in low water 150 feet below gauge.

Winter Flow—Relation of gauge height to discharge is slightly affected by ice. Measurements are taken to determine the winter flow.

Accuracy—The rating curve is fairly well defined for lower gauge readings.

Observer—Henry Stroud, Burk's Falls.

Discharge Measurements of Maganatawan River (North Branch) near Burk's Falls in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Nov. 26	Ronald, F	38	64	1.54	29.73	98 (a)	.....
Dec. 17	"	37	65	1.36	29.77	87 (a)	.....
1918							
Jan. 28	"	29	34	.88	29.48	30 (a)	.....
Feb. 24	"	36	36	1.42	29.60	51 (a)	.....
Apl. 11	"	89	655	1.11	32.23	729	.....
Apl. 11	"	89	655	1.07	32.23	702	.....
Apl. 17	"	88	615	.88	31.73	542	.....
Apl. 17	"	88	615	.89	31.73	545	.....
July 18	"	40	58	1.21	29.47	71	.....
Aug. 20	"	34	51	.82	29.20	42	.....
Sept. 11	"	35	53	.96	29.31	51	.....

(a) Ice measurement.

Daily Gauge Height in feet, and Discharge in second-feet, of Maganatawan River (North Branch) near Burk's Falls for 1917-8

Drainage Area, 107 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	29.19	42	30.27	196	29.81	99	29.81	47	29.44	28	29.90	83	32.15	690	30.90	328	30.59	261	29.59	82	29.06	35	29.08	36
2	29.23	45	30.31	203	29.78	94	29.77	44	29.40	27	29.88	80	31.81	575	30.90	328	30.55	252	29.59	82	29.01	32	29.10	37
3	29.31	51	30.31	203	29.73	87	29.77	44	29.40	27	29.87	79	32.06	660	30.81	307	30.47	236	29.63	87	28.97	31	29.14	39
4	29.40	60	30.31	203	29.73	87	30.06	71	29.40	27	29.85	76	33.15	1080	30.81	307	30.38	217	29.59	82	28.89	28	29.18	42
5	29.56	78	30.35	211	29.69	82	30.02	67	29.40	27	29.83	74	33.02	1030	30.81	307	30.30	201	29.57	79	28.89	28	29.22	44
6	29.65	90	30.31	203	29.60	70	30.02	67	29.40	27	29.75	65	32.90	980	30.81	307	30.22	187	29.55	76	28.93	29	29.26	47
7	29.73	102	30.23	188	29.60	70	29.98	63	29.40	27	29.73	63	32.48	810	30.77	299	30.13	170	29.57	79	28.97	31	29.29	49
8	29.81	115	30.19	181	29.56	66	29.97	63	29.44	28	29.73	63	32.60	860	30.77	299	30.09	163	29.59	82	29.01	32	29.31	51
9	29.85	122	30.15	174	29.61	71	29.90	55	29.48	29	29.77	67	32.48	810	30.73	290	30.05	156	29.59	82	29.10	37	29.33	53
10	29.90	130	30.10	165	29.69	75	29.81	47	28.48	29	29.90	83	32.40	780	30.81	307	29.97	142	29.61	84	29.08	36	29.35	55
11	29.94	137	30.06	158	29.77	86	29.81	47	29.48	31	29.98	102	32.19	705	30.90	328	29.97	142	29.61	84	29.06	35	29.35	55
12	29.94	137	30.02	151	29.81	91	29.81	47	29.44	30	29.98	102	32.15	690	30.89	326	30.01	149	29.59	82	28.97	31	29.37	57
13	29.98	144	29.98	144	29.81	91	29.81	47	29.44	30	30.02	108	31.90	605	31.06	366	29.90	130	29.57	79	29.47	67	29.37	57
14	29.98	144	29.98	144	29.81	91	29.77	44	29.40	30	29.94	96	31.73	550	31.23	409	29.80	113	29.55	76	29.51	71	29.39	59
15	29.98	144	29.98	144	29.77	86	29.77	44	29.40	30	29.90	90	31.69	540	31.40	453	29.80	113	29.55	76	29.47	67	29.43	63
16	29.94	137	29.94	137	29.77	86	29.77	44	29.35	28	29.81	84	31.69	540	31.40	453	29.80	113	29.55	76	29.43	63	29.47	67
17	29.94	137	29.90	130	29.77	86	29.73	42	29.31	28	29.73	74	31.65	525	31.31	430	29.80	113	29.38	58	29.39	59	29.52	73
18	29.94	137	29.90	130	29.77	79	29.73	42	29.36	30	29.73	74	31.90	605	31.23	409	29.80	113	29.30	50	29.35	55	29.76	107
19	29.98	144	29.90	130	29.81	84	29.69	39	29.31	28	29.77	79	31.65	525	31.06	366	29.78	110	29.39	59	29.31	51	29.64	89
20	30.06	158	29.90	130	29.81	78	29.77	44	29.23	28	29.81	84	31.48	476	30.98	347	29.78	110	29.39	59	29.18	42	29.76	107
21	30.02	151	29.85	122	29.77	73	29.65	37	29.23	28	30.06	132	31.40	453	30.97	345	29.76	107	29.39	59	29.22	44	29.72	100
22	29.98	144	29.85	113	29.77	67	29.65	37	29.36	32	30.23	161	31.31	430	30.88	323	29.63	87	29.39	59	29.14	39	29.68	94
23	29.98	144	29.90	122	29.83	74	29.61	35	29.48	39	30.15	147	31.23	409	30.80	305	29.63	87	29.39	59	29.06	35	29.70	97
24	30.02	151	29.90	122	29.77	62	29.56	32	29.65	55	30.31	185	31.15	388	30.72	288	29.67	93	29.35	55	29.06	35	29.72	100
25	30.06	158	29.81	107	29.75	60	29.52	31	29.69	59	30.40	201	31.10	376	30.67	278	29.63	87	29.31	51	29.06	35	29.76	107
26	30.10	165	29.77	100	29.77	57	29.58	34	29.73	63	30.56	234	31.06	366	30.63	269	29.63	87	29.36	56	29.01	32	29.79	111
27	30.15	174	29.75	97	29.81	56	29.48	29	29.81	71	30.65	263	30.98	347	30.63	269	29.59	82	29.22	44	29.10	37	29.85	122
28	30.23	188	29.73	94	29.81	51	29.48	29	29.85	76	30.69	271	31.06	366	30.55	252	29.59	82	29.14	39	29.14	39	29.89	128
29	30.17	178	29.73	94	29.77	48	29.48	29	.....	.....	30.95	328	30.98	347	30.72	288	29.59	82	29.10	37	29.12	38	29.93	135
30	30.19	181	29.77	100	29.90	60	29.48	29	.....	.....	30.90	316	30.90	328	30.72	288	29.59	82	29.10	37	29.10	37	29.93	135
31	30.23	188	.....	.....	29.86	56	29.48	29	.....	.....	30.98	347	.....	.....	30.63	269	.....	.....	29.06	35	29.06	35	.....	.....

Monthly Discharge of Maganatawan River (North Branch) near Burk's Falls for year ending Sept. 30th, 1918

Drainage Area, 107 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October... (1917)	188	42	131	1.76	.39	1.22	1.41
November "	211	94	147	1.97	.88	1.37	1.53
December "	99	48	75	.92	.45	.70	.81
January ..(1918)	71	29	44	.66	.27	.41	.47
February	76	27	35	.71	.25	.33	.34
March	347	63	136	3.24	.59	1.27	1.46
April.....	1,080	328	595	10.09	3.07	5.56	6.20
May.....	453	252	327	4.23	2.36	3.06	3.53
June	261	82	136	2.44	.77	1.27	1.42
July.....	87	35	66	.81	.33	.62	.71
August	71	28	41	.66	.26	.38	.44
September	135	36	77	1.26	.34	.72	.80
The year	1,080	27	151	10.09	.25	1.41	19.15

Maganatawan River (South Branch) near Burk's Falls

Location—One-half mile south of Burk's Falls station, and 200 feet east of G.T. Ry. tracks on lot 8, concession 8, Township of Armour, Parry Sound District.

Records Available—Discharge measurements from June, 1915. Daily gauge heights from August 1, 1915.

Drainage Area—257 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, fastened to 2 x 8 scantling wedged between two hardwood trees on the left shore 200 feet above low water gauging station. Zero of the gauge (elev. 22.14 feet) is referred to a bench mark (elev. 35.00 feet) painted on top of a 5-ft. iron pipe located near the gauge on the north branch of the river, and a bench mark (elevation 28.77), which is the head of a nail driven horizontally in one of the trees to which gauge is fastened.

Channel and Control—Straight for about 250 feet above and 500 feet below the rapids. The banks are high and wooded, and are not liable to overflow. The current is moderate.

Discharge Measurements—Made by wading with a small Price meter and from G.T.R. bridge, 1,500 feet below gauge.

Winter Flow—Relation of gauge height to discharge is but slightly affected by ice. Measurements are taken to determine the winter flow.

Regulation—Temporary dams above, which are used during log driving season, cause fluctuations at the gauge.

Accuracy—Rating curve only fairly well defined.

Observer—Henry Stroud, Burk's Falls.

Discharge Measurements of Maganatawan River (South Branch) near Burk's Falls in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Nov. 26....	Ronald, F.....	70	91	1.85	23.67	169 (a)	.....
Dec. 17....	"	58	86	1.82	23.75	157 (a)	.....
1918	"						
Jan. 27....	"	48	52	1.25	23.25	65 (a)	.....
Feb. 24....	"	49	67	1.73	23.37	116 (a)	.....
April 7....	"	86	613	1.83	25.87	1,124	.....
April 7....	"	86	613	1.83	25.87	1,123	.....
April 11....	"	86	622	1.96	26.00	1,217	.....
April 16....	"	86	591	1.94	25.92	1,149	.....
May 21....	McLennan, C. C..	80	520	1.34	25.48	698	.....
July 18....	Ronald, F	69	83	1.78	23.56	148	.....
Aug. 20....	"	72	80	1.49	23.47	119	.....
Sept. 11	"	69	73	1.44	23.37	105	.....

(a) Ice measurement.

Daily Gauge Height in feet, and Discharge in second-feet, of Maganatawan River (South Branch) near Burk's Falls for 1917-8

Drainage Area, 257 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	23.50	125	23.83	202	23.75	170	24.00	220	23.42	107	23.54	134	25.50	850	25.50	850	25.29	725	23.77	188	23.89	218	23.50	125
2	23.42	107	23.92	226	23.71	161	23.92	200	23.50	125	23.54	134	25.33	750	25.42	800	25.17	665	23.79	192	23.85	208	23.54	134
3	23.33	89	24.00	248	23.75	170	23.86	185	23.58	143	23.54	134	25.58	900	25.33	750	25.17	665	23.83	202	24.02	254	23.56	138
4	23.25	74	24.00	248	23.75	170	23.92	200	23.58	143	23.56	138	25.58	900	25.25	705	25.08	625	23.83	202	23.81	198	23.60	147
5	23.17	58	24.04	259	23.75	170	23.92	200	23.54	134	23.54	134	25.67	965	25.25	705	25.00	590	23.79	192	23.83	202	23.62	152
6	23.12	49	24.00	248	23.71	161	23.87	212	23.54	134	23.54	134	25.75	1020	25.25	705	24.92	555	23.77	188	23.81	198	23.64	156
7	23.08	42	23.92	226	23.58	132	23.83	202	23.54	134	23.54	134	25.83	1090	25.25	705	24.83	515	23.79	192	23.77	188	23.67	163
8	23.12	49	23.87	212	23.54	112	23.83	202	23.50	125	23.54	134	26.08	1280	25.25	705	24.83	515	23.79	192	23.73	178	23.67	163
9	23.12	49	23.75	182	23.54	112	23.79	192	23.54	134	23.54	134	26.00	1220	25.25	705	24.81	510	23.79	192	23.81	198	23.64	156
10	23.12	49	23.71	172	23.58	121	23.75	182	23.54	134	23.58	143	26.00	1220	25.29	725	24.75	486	23.79	192	23.79	192	23.64	156
11	23.12	49	23.67	163	23.92	200	23.75	182	23.50	125	23.54	134	26.00	1220	25.29	725	24.67	458	23.77	188	23.71	172	23.58	143
12	23.17	58	23.67	163	23.92	200	23.75	182	23.50	125	23.56	138	26.00	1220	25.37	770	24.67	458	23.75	182	23.77	188	23.56	138
13	23.17	58	23.67	163	24.00	220	23.75	182	23.54	134	23.58	143	26.00	1220	25.42	800	24.67	458	23.75	182	23.93	228	23.58	143
14	23.25	74	23.67	163	24.08	242	23.77	188	23.42	107	23.62	152	26.00	1220	25.58	900	24.58	426	23.69	168	24.02	254	23.58	143
15	23.25	74	23.67	163	24.08	242	23.79	192	23.42	107	23.67	163	26.00	1220	25.62	930	24.50	400	23.69	168	23.93	228	23.60	147
16	23.29	81	23.67	163	23.83	178	23.79	192	23.42	107	23.62	152	26.00	1220	25.62	930	24.50	400	23.69	168	23.89	218	23.60	147
17	23.29	81	23.62	152	23.83	178	23.79	192	23.42	107	23.58	143	26.00	1220	25.62	930	24.50	400	23.67	163	23.85	208	23.62	152
18	23.33	89	23.62	152	23.79	168	23.79	192	23.38	99	23.67	163	26.08	1280	25.66	960	24.50	400	23.94	231	23.81	198	23.65	158
19	23.42	107	23.62	152	23.83	178	23.79	192	23.33	89	23.83	202	26.00	1220	25.54	875	24.48	393	23.73	178	23.77	188	23.67	163
20	23.50	125	23.67	163	23.88	190	23.79	192	23.33	89	24.50	460	25.96	1190	25.46	825	24.48	393	23.73	178	23.77	188	23.67	163
21	23.54	134	23.67	163	23.83	178	23 75	182	23.33	89	24.42	374	25.92	1160	25.33	750	24.42	374	23.73	178	23.77	188	23.64	156
22	23.54	134	23.67	163	23.75	158	23.71	172	23.38	99	24.62	440	25.92	1160	25.31	740	24.37	357	23.73	178	23.73	178	23.65	158
23	23.58	143	23.67	163	23.75	158	23.58	143	23.33	89	24.42	374	25.92	1160	25.25	705	24.33	345	23.73	178	23.77	188	23.65	158
24	23.62	152	23.67	163	23.79	168	23.54	134	23.33	89	24.42	374	25.87	1120	25.25	705	24.33	345	23.73	178	23.79	192	23.67	163
25	23.67	163	23.62	152	23.77	163	23.42	107	23.42	107	24.42	374	25.83	1090	25.21	685	23.75	182	23.73	178	23.89	218	23.69	168
26	23.75	182	23.62	152	23.79	168	23.33	89	23.54	134	24.50	400	25.83	1090	25.31	740	23.75	182	23.73	178	23.93	228	23.73	178
27	23.83	202	23.67	163	23.83	178	23.25	74	23.54	134	24.50	400	25.75	1020	25.30	730	23.75	182	23.77	188	24.19	302	23.83	202
28	23.83	202	23.71	172	23.96	210	23.25	74	23.54	134	24.54	413	25.67	965	25.42	800	23.77	188	23.85	208	24.25	320	23.87	212
29	23.79	192	23.71	172	24.00	220	23.29	81	.....	....	24.54	413	25.58	900	25.50	850	23.77	188	24.02	254	24.25	320	23.87	212
30	23.79	192	23.75	182	24.08	242	23.33	89	.....	....	24.58	426	25.50	850	25.46	825	23.77	188	23.98	242	24.23	314	23.89	218
31	23.83	202	.....	....	24.04	231	23.33	89	.....	....	25.17	665	.....	....	25.33	750	.....	....	23.93	228	24.21	308	.....	.....

Monthly Discharge of Maganatawan River (South Branch) near Burk's Falls for year ending Sept. 30th, 1918

Drainage Area, 257 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	202	42	109	.79	.16	.42	.48
November "	259	152	182	1.01	.59	.71	.79
December "	242	112	179	.94	.44	.70	.81
January (1918)	220	74	165	.86	.29	.64	.74
February	143	89	117	.56	.35	.46	.48
March	665	134	251	2.59	.52	.98	1.13
April	1,280	750	1,098	4.98	2.92	4.27	4.76
May	960	685	783	3.74	2.67	3.05	3.52
June	725	182	419	2.82	.71	1.63	1.82
July	254	163	191	.99	.63	.74	.85
August	320	172	221	1.25	.67	.86	.99
September	218	125	160	.85	.49	.62	.69
The year	1,280	42	323	4.98	.16	1.26	17.06

Mississippi River at Ferguson's Falls

Location—At the bridge on the road through the Village of Ferguson's Falls, near lots 16 and 17, concession 12 Township of Drummond, County of Lanark.

Records Available—Discharge measurements from July, 1915, and gauge readings from July 13, 1915.

Drainage Area—1,042 square miles.

Gauge—0 to 6 feet of standard gauge plates secured to the inner face of the first pier from the south end of the bridge and near the downstream corner of the pier.

Channel and Control—Channel is straight for 300 feet above and ½ mile below the gauging station. The banks are not liable to overflow. There are 7 channels, formed by the piers of the bridge. The present control is a short distance below the section, and ice action there will affect the discharge relation at low winter stages, but this will not be the point of control for high-water stages. At certain stages measurements are made 1,500 feet below bridge.

Winter Flow—Discharge relation is affected by ice.

Regulation—The river is regulated throughout its length by power and storage dams, as well as dams in connection with the timber industry.

Accuracy—Open water flow relation is good.

Observer—A. M. Sheppard, Fergusons' Falls.

Discharge Measurements of Mississippi River at Ferguson's Falls in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 3....	Ronald, F.....	233	227	1.32	101.13	301	.....
Dec. 3....	Hatton, M. R ...	200	250	1.47	101.33	367(a)	.....
1918							
Mar. 9....	Ronald, F	195	496	2.29	102.75	1,136(a)	.....
May 9....	"	196	538	4.29	102.58	2,289	.....
Sept. 24....	"	235	286	1.48	101.26	424	.....

(a) Ice measurement.

Daily Gauge Height in feet, and Discharge in second-feet, of Mississippi River at Ferguson's Falls for 1917-8

Drainage Area, 1,042 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	101.11	316	101.60	700	101.32	384	101.34	304	101.83	462	102.73	1130	103.73	4290	103.16	3220	101.99	1140	101.33	462	101.33	462	101.42	530
2	101.10	310	101.62	720	101.33	391	101.40	340	101.83	462	102.71	1040	104.00	4790	103.02	2960	101.95	1090	101.54	640	101.33	462	101.39	510
3	101.12	322	101.63	730	101.33	358	101.41	346	101.81	412	102.68	1010	104.29	5340	102.94	2810	101.90	1030	101.65	750	101.33	462	101.37	492
4	101.12	322	101.64	740	101.33	358	101.43	358	101.81	412	102.67	995	104.46	5650	102.88	2690	101.81	920	101.69	790	101.31	448	101.54	640
5	101.12	322	101.64	740	101.27	322	101.42	352	101.82	419	102.67	995	104.69	6090	102.82	2580	101.75	855	101.69	790	101.29	433	101.62	720
6	101.10	310	101.61	710	101.25	310	101.43	328	101.84	433	102.69	1020	104.75	6200	102.77	2490	101.71	810	101.67	770	101.29	433	101.58	680
7	101.10	310	101.59	690	101.25	310	101.45	340	101.88	462	102.73	1070	104.73	6160	102.69	2340	101.66	760	101.63	730	101.26	412	101.52	620
8	101.08	298	101.55	650	101.25	310	101.51	377	101.92	455	102.74	1020	104.67	6050	102.64	2250	101.62	720	101.60	700	101.26	412	101.50	600
9	101.08	298	101.54	640	101.31	346	101.56	412	102.01	525	102.72	995	104.63	5980	102.61	2190	101.59	690	101.58	680	101.22	384	101.49	590
10	101.08	298	101.51	610	101.48	462	101.58	426	102.00	515	102.71	980	104.56	5840	102.57	2110	101.56	660	101.58	680	101.19	364	101.49	590
11	101.08	298	101.48	585	101.44	433	101.61	448	102.00	515	102.69	960	104.48	5690	102.56	2090	101.54	640	101.58	680	101.17	352	101.52	620
12	101.14	334	101.45	560	101.40	405	101.64	433	102.00	515	102.67	935	104.38	5500	102.53	2040	101.56	660	101.60	700	101.17	352	101.57	670
13	101.16	346	101.42	530	101.40	405	101.66	448	102.09	590	102.67	935	104.27	5300	102.51	2000	101.55	650	101.62	720	101.17	352	101.59	690
14	101.17	352	101.39	510	101.40	405	101.65	440	102.11	565	102.65	910	104.19	5150	102.47	1920	101.53	630	101.63	730	101.17	352	101.58	680
15	101.17	352	101.37	490	101.40	405	101.67	455	102.19	640	102.62	875	104.10	4980	102.43	1850	101.50	600	101.60	700	101.15	340	101.58	680
16	101.17	352	101.35	478	101.40	405	101.73	500	102.27	720	102.60	855	104.03	4850	102.40	1790	101.44	550	101.58	680	101.13	328	101.57	670
17	101.16	346	101.35	478	101.40	405	101.73	462	102.30	750	102.60	855	103.95	4700	102.38	1750	101.45	560	101.57	670	101.13	328	101.56	660
18	101.17	352	101.37	490	101.43	391	101.74	470	102.33	780	102.62	875	103.89	4590	102.35	1700	101.46	565	101.54	640	101.11	316	101.52	620
19	101.15	340	101.37	455	101.42	384	101.75	478	102.35	750	102.65	970	103.84	4500	102.33	1660	101.42	530	101.52	620	101.09	304	101.44	550
20	101.15	340	101.37	455	101.40	370	101.74	470	102.38	780	102.70	1150	103.82	4460	102.33	1660	101.36	485	101.50	600	101.08	298	101.37	492
21	101.12	322	101.37	455	101.40	370	101.73	462	102.42	820	102.79	1420	103.77	4360	102.31	1630	101.35	478	101.47	575	101.09	304	101.33	462
22	101.12	322	101.37	455	101.40	370	101.73	462	102.43	835	102.87	1740	103.70	4230	102.27	1560	101.33	462	101.47	575	101.12	322	101.31	448
23	101.12	322	101.38	462	101.40	370	101.75	440	102.48	890	102.94	2060	103.67	4170	102.22	1470	101.33	462	101.46	565	101.17	352	101.30	440
24	101.17	352	101.37	455	101.40	370	101.75	440	102.52	935	103.01	2380	103.62	4080	102.18	1410	101.33	462	101.44	550	101.20	370	101.29	433
25	101.27	419	101.42	492	101.42	384	101.75	440	102.58	945	103.07	2670	103.57	3990	102.13	1340	101.35	478	101.42	530	101.25	405	101.29	433
26	101.29	433	101.35	405	101.40	370	101.75	440	102.61	980	103.02	2770	103.52	3900	102.09	1280	101.33	462	101.39	510	101.30	440	101.29	433
27	101.29	433	101.33	391	101.38	358	101.75	440	102.67	1050	103.02	2960	103.44	3750	102.09	1280	101.33	462	101.37	492	101.33	462	101.27	419
28	101.35	478	101.33	391	101.36	346	101.76	412	102.75	1150	103.12	3150	103.35	3580	102.07	1250	101.33	462	101.34	470	101.33	462	101.27	419
29	101.46	565	101.33	391	101.35	340	101.88	500	.....	....	103.23	3350	103.33	3540	102.05	1220	101.33	462	101.37	492	101.33	462	101.27	419
30	101.54	640	101.33	391	101.34	334	101.80	440	.....	....	103.38	3630	103.27	3420	102.02	1180	101.33	462	101.37	492	101.24	398	101.27	419
31	101.58	680	.....	...	101.33	328	101.83	462	.....	....	103.41	3690	.....	....	102.00	1150	.....	....	101.36	485	101.38	500	.....	.....

Monthly Discharge of Mississippi River at Ferguson's Falls for year ending Sept. 30th, 1918

Drainage Area, 1,042 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	680	298	370	.65	.29	.36	.42
November "	740	391	542	.71	.38	.52	.58
December "	462	310	371	.44	.30	.36	.42
January...(1918)	500	304	423	.48	.29	.41	.47
February.....	1,150	412	670	1.10	.40	.64	.67
March.....	3,690	855	1,593	3.54	.82	1.53	1.76
April.....	6,200	3,420	4,838	5.95	3.28	4.64	5.17
May.....	3,220	1,150	1,899	3.09	1.10	1.82	2.10
June	1,140	462	640	1.09	.44	.61	.68
July	790	462	628	.76	.44	.60	.69
August.....	500	298	389	.48	.29	.37	.43
September.....	720	419	554	.69	.40	.53	.59
The year	6,200	298	1,074	5.95	.29	1.03	14.00

Mississippi River at Galetta

Location—In the Village of Galetta, Township of Fitzroy, County of Carleton, about one hundred feet above, and parallel to the highway bridge over the river. It is only a few hundred yards below the dam and power house of the Galetta Power & Milling Company.

Records Available—Discharge measurements from June, 1915, and gauge readings twice daily from June 24, 1915.

Drainage Area—1,456 square miles.

Gauge—0 to 9 feet of standard gauge plates secured to the left abutment of the highway bridge. This gauge was used till August 3rd, 1918, when construction work was started on new bridge. From August 4, to September 16, inclusive, readings were taken from temporary bench mark located 20 feet downstream from left abutment. On September 16th, when bridge was completed, a bench mark (elevation 255.55) was established on bridge 5 feet west of left abutment. Water elevations are secured by measuring to water surface with graduated staff.

Channel and Control—Channel is straight for 200 feet above and below the section to a little rapid. The river bed is composed of gravel and stones, with solid rock on the right bank and gravel on the left bank. The point of control is through a solid rock formation a hundred and fifty yards below the section.

Discharge Measurements—Made by wading and from a boat held up to tag line by cable. Extreme high-water measurements have to be made from the highway bridge.

Winter Flow—The winter conditions do not seriously affect the gauge height and discharge relations.

Regulation—The river is subject to regulation throughout its entire length. In the upper river are storage dams for power purposes, as well as timber dams for driving purposes.

Accuracy—Piers of old bridge which have not been removed will likely change curve.

Co-operation—Discharge measurements made at the bridge by the Department of Public works of Canada.

Observer—J. P. Coyne, Galetta.

Discharge Measurements of Mississippi River at Galetta in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 19....	Ronald, F.....	69	120	3.66	244.14	438	.....
Dec. 31....	Hatton, M.R....	65	142	2.76	244.49	390(a)	.....
1918							
Jan. 17....	"	63	133	2.86	244.44	381(b)	.....
Mar. 25....	"	101	986	2.60	249.49	2,561	.....
" 30....	"	104	1,178	3.76	251.01	4,431	.....
April 4....	Ronald, F.....	105	1,277	6.11	252.49	7,804	.....
" 15....	Hatton, M.....	104	1,207	5.45	251.65	6,574	.....
" 15....	"	104	1,185	4.17	251.09	4,938	.....
" 27....	"	104	1,016	2.93	249.68	2,975	.....
May 14....	Ronald, F.....	98	871	2.10	248.01	1,831	.....
July 31....	Hatton, M.....	93	206	2.65	244.51	545	.....
Sept. 16....	Ronald, F	91	164	2.99	244.45	490	.....

(a) Ice below section.
(b) Ice at edges of section.

Daily Gauge Height in feet, and Discharge in second-feet, of Mississippi River at Galetta for 1917-8

Drainage Area, 1,456 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	243.90	330	245.53	825	244.82	575	244.20	300	244.53	399	246.11	890	251.78	5590	249.82	3840	246.05	1010	244.43	489	244.16	408	244.65	555
2	243.95	345	245.38	775	244.53	489	244.20	300	244.65	435	246.19	915	252.90	9230	249.61	2870	245.88	950	244.59	535	244.13	399	244.13	399
3	243.97	351	245.40	780	244.69	535	244.15	285	244.53	399	246.11	890	252.57	8080	249.49	2780	245.55	830	244.57	530	244.09	387	244.23	429
4	244.07	381	245.19	715	244.82	575	244.17	291	244.49	387	246.03	860	252.40	7480	249.36	2680	245.64	865	244.59	535	244.38	474	244.34	462
5	244.11	393	245.19	715	244.72	545	244.20	300	244.69	447	246.20	920	252.24	6930	249.13	2520	215.55	830	244.55	525	244.19	417	245.29	745
6	244.13	399	245.32	755	244.72	530	244.28	324	244.53	399	246.24	935	252.90	9230	248.93	2400	245.34	760	244.59	535	244.17	411	244.78	595
7	243.99	357	245.19	715	244.65	510	244.28	324	244.69	447	246.19	915	253.03	9680	249.01	2450	245.30	750	244.34	462	244.57	530	244.59	535
8	243.97	351	245.30	750	244.53	474	244.32	336	244.82	486	246.32	960	253.03	9680	248.86	2360	245.34	760	244.18	414	244.58	535	244.40	480
9	243.95	345	245.36	770	244.38	429	244.49	387	244.74	462	246.24	935	252.49	7800	248.72	2270	244.72	575	244.89	625	244.76	590	244.26	438
10	243.92	336	245.24	730	244.45	450	244.49	387	244.70	450	245.94	830	252.36	7340	248.61	2210	244.47	500	244.93	640	244.72	575	244.52	515
11	243.97	351	245.13	700	244.57	471	244.40	360	244.57	411	246.15	900	252.15	6630	248.50	2140	244.72	575	245.05	675	244.58	535	244.72	575
12	244.07	381	244.99	655	244.78	535	244.45	375	244.74	462	246.36	975	252.04	6290	248.42	2100	245.26	740	244.89	625	244.21	423	244.80	600
13	244.28	444	244.99	655	244.61	483	244.24	312	244.82	486	246.45	1010	251.95	6030	248.45	2110	245.01	665	244.63	550	244.30	450	244.98	655
14	244.36	468	245.03	670	244.49	447	244.24	312	244.78	474	246.28	950	251.74	5500	247.97	1850	244.72	575	244.38	474	244.63	550	245.02	665
15	244.20	420	245.03	670	244.65	495	244.40	360	244.70	450	246.28	950	251.61	5220	247.80	1760	244.59	535	244.42	486	244.54	520	244.88	625
16	244.24	432	244.90	630	244.53	444	244.45	375	244.70	450	246.32	960	251.49	4980	247.64	1680	244.26	438	244.80	600	244.40	480	244.63	550
17	244.20	420	244.86	620	244.45	420	244.36	348	244.53	399	246.32	960	251.36	4660	247.38	1560	244.14	402	244.76	590	244.48	505	245.03	670
18	244.15	405	244.86	620	244.36	393	244.40	360	244.45	375	246.24	935	251.19	4490	247.09	1430	244.18	414	244.63	550	244.17	411	245.13	700
19	244.28	444	244.70	570	244.36	393	244.45	375	244.53	399	247.24	1320	251.03	4260	246.88	1340	244.31	453	244.63	550	244.17	411	245.09	685
20	244.45	495	244.94	640	244.45	420	244.40	360	245.03	550	247.53	1450	250.95	4160	246.93	1360	244.30	450	244.51	515	244.08	384	245.05	675
21	244.20	420	244.82	605	244.53	429	244.36	348	245.03	550	247.44	1410	250.86	4040	246.88	1340	244.24	432	244.34	462	244.38	474	244.89	625
22	244.11	393	244.82	605	244.53	429	244.36	348	245.11	575	247.90	1620	250.90	4090	246.72	1270	244.34	462	244.22	426	244.71	575	244.76	590
23	244.11	393	244.74	580	244.32	366	244.53	399	245.20	600	248.19	1760	250.78	3950	246.61	1220	243.97	351	244.38	474	244.76	590	244.43	489
24	244.11	393	244.61	545	244.28	354	244.53	399	245.19	595	248.78	2070	250.69	3840	246.47	1170	243.81	303	244.38	474	244.63	550	244.68	565
25	244.40	480	244.61	530	244.36	378	244.53	399	245.17	590	249.20	2380	250.53	3670	246.43	1150	243.51	213	244.42	486	244.54	520	244.80	600
26	244.86	620	244.70	555	244.34	357	244.45	375	245.90	815	249.70	2780	250.36	3500	296.34	1120	243.84	212	244.42	486	244.24	432	244.59	535
27	244.74	580	244.86	605	244.36	363	244.36	348	245.90	815	250.10	3180	250.24	3400	246.51	1180	244.01	363	244.38	474	244.27	441	244.93	640
28	245.40	780	244.86	605	244.45	390	244.45	375	246.03	860	249.74	2970	250.11	3280	246.26	1080	244.18	414	244.13	399	244.63	550	744.64	550
29	245.84	935	244.78	580	244.49	402	244.42	366	.....	....	250.24	3400	250.03	3210	246.14	1040	244.20	420	243.80	300	244.67	560	244.17	411
30	245.86	940	244.76	575	244.53	414	244.57	411	.....	....	251.28	4620	249.99	3180	246.14	1040	243.96	348	244.34	462	244.58	535	244.22	426
31	245.78	915	.....	.....	244.45	375	244.70	450	.....	....	252.15	6630	.....	....	246.09	1020	.....	....	244.30	450	244.87	620	.....	....

Monthly Discharge for Mississippi River at Galetta for the year ending Sept. 30th, 1918

Drainage Area, 1,456 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October...(1917)	940	330	474	,65	.23	.33	.38
November "	825	530	658	.57	.36	.45	.50
December "	575	354	447	.39	.24	.31	.36
January ..(1918)	450	285	354	.31	.20	.24	.28
February	860	375	506	.59	.26	.35	.36
March.....	6,630	830	1,686	4.55	.57	1.16	1.34
April.....	9,680	3,180	5,647	6.65	2.18	3.88	4.33
May.....	3,040	1,020	1,792	2.09	.70	1.23	1.42
June.....	1,010	213	556	.69	.15	.38	.42
July.....	675	300	510	.46	.21	.35	.40
August.....	620	384	492	.43	.26	.34	.39
September.....	745	411	566	.51	.28	.39	.44
The year	9,680	213	1,138	6.65	.15	.79	10.70

Mississippi River near Snow Road

Location—At the highway bridge about two miles below the Village of Snow Road, Township of Sherbrooke, County of Lanark.

Records Available—Discharge measurements from July, 1915, and gauge readings on week days since July 30, 1915.

Drainage Area—446 square miles.

Gauge—0 to 6 ft. of standard gauge plates secured vertically to the downstream side of the right abutment of the highway bridge. The elevation of the zero on gauge is assumed as 100.00.

Channel and Control—The channel approaches and leaves the section at a slight angle. The banks are high, and are not liable to overflow. The bridge pier forms two channels at the gauging section. Earth, rocks and gravel in the river bed, not shifting. Control for ordinary stages not well defined. At very high water stages the point of control is probably the head of the rapids just above High Falls.

Discharge Measurements—Measurements made from bridge at all stages.

Winter Flow—Discharge relation affected by ice.

Regulation—The power and lumber companies operating on this river have storage dams above this point.

Accuracy—No Sunday readings have been secured by gauge-readers, but the fluctuation in stage is slow. The open-water relation should be good.

Observer—W. J. Jackson, Snow Road.

Discharge Measurements of Mississippi River near Snow Road in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 16....	Hatton, M. R....	58	277	.62	101.87	191	.....
Dec. 27....	" ...	58	307	.73	102.00	226 (a)	.....
1918							
Mar. 1....	" ...	57	328	1.34	103.00	441 (a)	....
Apr. 2....	Hatton, M.....	58	404	3.06	104.35	1,238 (b)	.....
" 10....	"	58	542	4.16	105.83	2,296	.....
May 9....	Ronald, F.....	58	456	2.38	103.71	1,086	.....
Aug. 27....	"	58	350	1.36	102.75	476	.....
" 27....	"	58	350	1.36	102.75	477	.....
Sept. 26....	"	58	314	.71	102.00	224	.....

(a) Ice measurement.
(b) Ice above section.

Daily Gauge Height in feet, and Discharge in second-feet, of Mississippi River near Snow Road for 1917-8

Drainage Area, 446 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	102.00	237	102.25	322	102.02	227	102.13	247	102.37	227	103.00	416	104.12	1230	104.25	1300	102.44	393	102.33	351	102.33	351	.....	530
2	101.96	224	102.25	322	.....	230	102.17	260	102.37	227	103.00	416	104.33	1350	104.21	1280	.....	376	102.42	386	102.33	351	102.83	555
3	102.00	237	102.25	322	102.04	234	102.21	274	.....	229	.....	401	104.86	1680	104.14	1240	102.35	359	102.42	386	102.33	351	102.83	555
4	102.00	237	.....	308	102.04	234	102.25	288	102.38	231	102.92	386	105.00	1770	104.08	1200	102.27	330	102.50	416	.....	344	102.79	535
5	102.00	237	102.17	294	102.04	234	102.25	288	102.40	237	102.92	386	105.00	1770	.....	1160	102.17	294	102.50	416	102.29	336	102.81	545
6	102.00	237	102.17	294	102.00	221	.....	279	102.42	227	102.92	386	105.00	1770	103.92	1110	102.17	294	102.42	386	102.29	336	102.62	464
7	.....	234	102.12	277	102.00	221	102.25	270	102.46	240	102.89	374	.....	2010	103.83	1060	102.13	280	.....	368	102.29	336	102.75	520
8	101.98	231	102.08	263	102.00	221	102.40	322	102.50	254	102.87	367	105.79	2280	103.79	1040	102.08	263	102.33	351	102.27	330	.....	625
9	101.92	211	102.08	263	.....	218	102.33	298	102.50	254	102.83	351	106.17	2530	103.73	1010	.....	278	102.33	351	102.27	330	103.21	735
10	101.92	211	102.08	263	101.98	215	102.33	298	.....	245	.....	351	106.00	2420	103.65	960	102.17	294	102.33	351	102.27	330	103.21	735
11	101.92	211	102.04	250	101.98	215	102.33	280	102.50	237	102.83	351	105.69	2220	103.62	945	102.21	308	102.42	386	.....	330	103.17	715
12	101.96	224	102.04	250	101.96	208	102.33	280	102.62	277	102.83	351	105.50	2100	.....	945	102.19	302	102.50	416	102.27	330	103.08	670
13	102.00	237	102.02	244	101.96	208	.....	280	102.75	322	102.83	351	105.46	2070	103.62	945	102.19	302	102.50	416	102.27	330	102.83	555
14	.....	224	102.02	244	101.98	215	102.33	280	102.77	330	102.83	351	.....	2050	103.67	975	102.19	302	.....	401	102.17	294	102.75	520
15	101.92	211	102.00	237	102.00	221	102.33	280	102.92	386	102.83	351	105.42	2040	103.64	960	102.19	302	102.42	386	102.17	294	.....	510
16	101.87	197	102.00	237	.....	221	102.33	263	103.08	448	102.83	351	105.42	2040	103.65	960	.....	302	102.42	386	102.17	294	102.71	500
17	101.83	186	.....	244	102.00	221	102.33	263	.....	432	.....	344	105.42	2040	103.65	960	102.19	302	102.42	386	102.17	294	102.67	488
18	101.83	186	102.04	250	102.00	221	102.33	263	103.00	416	102.79	336	105.44	2060	103.50	880	102.17	294	102.42	386	.....	294	102.58	448
19	101.83	186	102.04	250	102.00	221	102.33	263	103.25	436	102.77	330	105.35	2000	.....	835	102.17	294	102.42	386	102.17	294	102.50	416
20	101.92	211	102.04	250	102.00	221	.....	255	103.58	490	102.75	322	105.25	1930	103.33	795	102.17	294	102.42	386	102.17	294	102.33	351
21	.....	201	102.04	250	102.00	221	102.33	247	103.25	520	102.79	336	.....	1880	103.33	795	102.17	294	.....	386	102.17	294	102.00	237
22	101.85	192	102.08	263	102.00	221	102.33	247	103.08	448	102.87	367	105.08	1820	103.25	755	102.25	322	102.42	386	102.21	308	.....	247
23	101.85	192	102.08	263	.....	221	102.33	247	103.08	448	103.08	448	105.00	1770	103.17	715	.....	322	102.42	386	102.58	448	102.06	257
24	101.87	197	102.08	247	102.00	221	102.33	247	.....	448	.....	505	104.96	1740	103.08	670	102.25	322	102.42	386	102.92	595	102.06	257
25	101.96	224	.....	234	102.00	221	102.33	247	103.08	448	103.35	560	104.87	1690	103.00	630	102.25	322	102.40	378	.....	560	102.06	257
26	101.98	231	102.00	221	102.00	221	102.33	231	103.08	448	103.42	595	104.67	1560	.....	610	102.25	322	102.37	367	102.75	520	102.02	244
27	102.00	237	102.00	221	102.00	221	.....	221	103.08	448	103.46	660	104.58	1500	102.90	585	102.25	322	102.37	367	102.67	485	102.04	250
28	.....	240	102.00	221	102.00	221	102.27	211	103.08	448	103.42	690	.....	1430	102.88	575	102.25	322	.....	372	102.67	485	102.04	250
29	102.02	244	102.00	221	102.00	221	102.29	218	.....	.....	103.29	675	104.33	1350	102.67	485	102.25	322	102.40	378	102.71	500	.....	250
30	102.14	284	102.00	221	.....	213	102.39	250	.....	.....	103.29	725	104.31	1340	102.58	440	.....	322	102.42	386	102.73	510	102.04	250
31	102.23	316	.....	.....	102.00	205	102.39	250	.....	.....	.....	980	.....	.....	102.50	416	.....	.....	102.37	367	102.73	510	.....	.....

Monthly Discharge for Mississippi River near Snow Road for year ending September 30th, 1918

Drainage Area, 446 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October ..(1917)	316	186	223	.71	.42	.50	.58
November "	322	221	258	.72	.50	.58	.65
December "	234	205	220	.52	.46	.49	.56
January ..(1918)	322	211	263	.72	.47	.59	.68
February	520	227	350	1.17	.51	.78	.81
March	980	322	446	2.20	.72	1.00	1.15
April	2,530	1,230	1,848	5.67	2.76	4.14	4.62
May	1,300	416	879	2.91	.93	1.97	2.27
June.....	393	263	312	.88	.59	.70	.78
July	416	351	382	.93	.79	.86	.99
August	595	294	376	1.33	.66	.84	.97
September	735	237	449	1.65	.53	1.01	1.13
The year	2,530	186	499	5.67	.42	1.12	15.19

Moira River near Foxboro

Location—Three hundred feet above G.T.R. Crossing, and six hundred feet east of Foxboro Station, on the G.T.R.-Belleville, Peterboro Branch. Near lot 5, concession VI, Township of Thurlow, County of Hastings.

Records Available—Monthly discharge measurements from September, 1915, and gauge readings from October 12, 1915.

Drainage Area—1,038 square miles.

Gauge—A boxed chain gauge on the right bank of the river against a tree 400 feet above section. When the gauge reads zero the elevation of the water is 320.46.

Channel and Control—At one side of the river at the section are boulders and rocks, but the rest of the section is smooth, solid rock, liable to no movement at all. The control is only a few feet below the section and is not likely to freeze over in winter except for short periods of time.

Discharge Measurements—At ordinary stages the measurements are made by wading, at tag line. At high water measurements are made by boat at a point opposite the gauge.

Winter Flow—The relation of gauge height to discharge is but slightly affected by ice, and in a fairly uniform manner throughout the winter.

Regulation—The river above the section has dams in many places besides the regulation for the lumber interest, on different tributary lakes and streams.

Accuracy—Open water relation will be good.

Observer—C. Stewart, Foxboro P.O.

Discharge Measurements of Moira River near Foxboro in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 9....	Ronald, F	151	156	.67	321.33	104	.....
Nov. 15....	"	159	314	1.81	322.58	570	.....
Dec. 5....	Hatton, M.....	157	277	1.60	322.71	442(a)	.....
1918							
Feb. 8....	Ronald, F.....	149	127	1.31	321.92	164(a)	.....
Mar. 27....	" ..	210	2,968	2.40	327.25	7,111	.....
June 12 ...	" ..	166	287	1.78	322.55	512	.....
Sept. 25....	" ..	159	203	1.12	322.06	226	.....

(a) Ice measurement.

Daily Gauge Height in feet, and Discharge in second-feet, of Moira River near Foxboro for 1917-8

Drainage Area, 1,038 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	321.20	55	322.41	436	322.42	442	322.00	90	321.81	66	323.50	630	327.56	7600	323.97	1950	323.43	1310	322.29	370	321.98	223	321.76	148
2	321.20	55	322.74	660	322.46	436	322.02	94	321.84	69	323.55	665	327.86	8170	323.89	1860	323.36	1230	322.31	380	321.97	220	321.75	145
3	321.20	55	323.16	1020	321.94	174	322.02	94	321.82	67	323.58	685	328.07	8570	323.83	1790	323.28	1140	322.40	430	321.94	209	321.70	130
4	321.20	55	323.15	1010	322.54	397	321.95	82	321.81	66	323.51	635	328.08	8590	323.77	1710	323.22	1080	322.48	478	321.91	198	321.72	136
5	321.23	58	323.14	1000	322.61	380	321.95	82	321.78	63	383.50	630	327.98	8400	323.77	1710	323.16	1020	322.54	520	321.88	188	322.05	250
6	321.29	64	323.07	935	322.46	300	321.86	71	321.84	69	323.50	630	327.70	7870	323.58	1490	323.12	985	322.54	520	321.81	164	322.08	262
7	321.16	53	323.10	965	322.38	262	321.84	69	321.86	71	323.51	635	327.25	7020	323.49	1380	323.03	900	322.48	478	321.80	160	322.09	266
8	321.17	54	323.10	965	322.41	275	321.81	66	321.93	80	323.51	635	326.97	6480	323.45	1330	322.93	805	322.50	490	321.84	174	322.07	258
9	321.17	54	323.08	945	322.43	285	321.82	67	322.01	92	323.50	630	326.85	6260	323.48	1370	322.76	670	322.55	525	321.87	184	322.04	246
10	321.38	73	322.96	835	322.29	226	321.82	67	322.03	96	323.26	466	326.51	5610	323.42	1290	322.74	660	322.56	530	321.82	167	322.06	254
11	321.58	106	322.81	710	322.17	184	321.84	69	322.00	90	323.31	497	326.38	5370	323.40	1270	322.70	630	322.56	530	321.90	195	322.06	254
12	321.59	108	322.81	710	322.29	226	321.84	69	322.01	92	323.51	635	326.17	5000	323.46	1340	322.68	615	322.56	530	321.91	198	322.08	262
13	321.67	124	322.81	710	322.29	226	.....	70	322.06	102	323.51	635	325.88	4520	323.52	1410	322.64	590	322.56	530	321.83	170	322.08	262
14	321.68	126	322.81	710	322.29	226	.....	70	322.07	104	323.60	700	325.63	4140	323.54	1440	322.59	555	322.53	510	321.90	195	322.03	242
15	321.67	124	322.65	595	322.17	184	321.87	72	322.04	98	323.68	765	325.47	3900	383.56	1460	322.53	510	322.53	510	321.90	195	321.92	202
16	321.65	120	322.58	545	322.17	184	321.87	72	321.99	88	323.68	765	325.25	3590	323.52	1410	322.45	460	322.49	484	321.90	195	321.84	174
17	321.61	112	322.56	530	322.23	206	321.87	72	321.99	88	323.78	850	325.16	3460	323.46	1340	322.41	436	322.50	490	321.81	164	321.88	188
18	321.58	106	322.56	530	322.17	184	321.87	72	321.98	87	323.86	925	324.03	3150	323.43	1310	322.36	408	322.48	478	321.74	142	321.90	195
19	321.76	148	322.56	530	322.19	192	321.87	72	322.02	94	323.85	920	324.80	2980	323.42	1290	322.32	386	322.48	478	321.75	145	321.98	223
20	321.67	124	322.58	545	322.27	220	321.87	72	322.07	104	324.10	1390	324.69	2840	323.30	1160	322.28	364	322.32	386	321.73	139	321.96	216
21	321.79	157	322.57	540	322.25	212	321.84	69	322.21	133	324.39	1980	324.58	2690	323.20	1060	322.32	386	322.27	358	321.72	136	321.96	216
22	321.66	122	322.60	560	322.18	188	321.82	67	322.22	136	324.76	2670	324.55	2660	323.11	975	322.30	375	322.25	348	321.67	124	321.95	212
23	321.65	120	322.59	520	322.16	181	321.81	66	322.22	136	325.52	3830	324.57	2680	323.03	900	322.40	430	322.18	310	321.67	124	321.98	223
24	321.73	139	322.59	520	322.10	160	321.83	68	322.22	136	.....	4540	324.56	2670	322.99	860	322.36	408	322.14	290	321.69	128	322.06	254
25	321.77	151	322.59	520	322.16	164	321.82	67	322.67	258	.....	5260	324.48	2570	322.97	845	322.36	408	322.11	275	321.67	124	322.06	254
26	321.72	136	322.50	430	322.16	148	321.86	71	323.19	484	.....	5980	324.38	2450	322.94	815	322.28	364	322.07	258	321.67	124	322.08	262
27	321.88	188	322.49	424	322.17	136	321.86	71	323.39	555	327.08	6690	324.36	2420	323.12	985	322.24	344	322.05	250	321.67	124	322.07	258
28	322.05	250	322.38	364	322.17	124	321.85	70	323.53	650	327.21	6940	324.23	2270	323.25	1110	322.20	320	322.02	238	321.67	124	322.06	254
29	322.22	331	322.42	414	322.17	124	321.86	71	.....	....	327.16	6840	324.09	2100	323.29	1150	322.20	320	321.98	223	321.68	126	.....	254
30	322.43	448	322.44	424	322.06	102	321.79	64	.....	....	327.21	6940	324.01	2000	323.35	1220	322.19	315	321.98	223	321.67	124	.....	258
31	322.42	442	.....	....	322.04	98	321.82	67	.....	....	327.30	7110	.....	....	323.48	1370	.....	....	321.98	223	321.67	124	.....	....

Monthly Discharge for Moira River near Foxboro for year ending September 30th, 1918

Drainage Area, 1,038 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	448	53	137	.43	.05	.13	.15
November "	1,020	364	653	.98	.35	.63	.70
December "	442	98	221	.43	.09	.21	.24
January (1918)	94	64	72	.09	.06	.07	.08
February	650	63	149	.63	.06	.14	.15
March	7,110	466	2,358	6.85	.45	2.27	2.62
April	8,590	2,000	4,601	8.28	1.93	4.43	4.94
May	1,950	815	1,310	1.88	.78	1.26	1.45
June	1,310	315	614	1.26	.30	.59	.66
July	530	223	408	.51	.21	.39	.45
August	223	124	162	.21	.12	.16	.18
September	266	130	225	.26	.13	.22	.25
The year	8,590	53	909	8.28	.05	.88	11.89

Muskoka River (South Branch) at Black's Bridge

Location—At the highway bridge known as Black's Bridge, about five and one-half miles south of the Town of Bracebridge and two and one-half miles south of the Hydro-Electric Power Commission's plant at South Falls.

Records Available—High water measurements have been taken here since April 24th, 1915, in conjunction with the Tretheway's Falls section which has been discontinued, gauge heights from June 4th, 1918.

Drainage Area—668 square miles.

Gauge—Twelve feet of standard gauge plates secured vertically to the downstream corner of right abutment. Zero of gauge from June 4th, to August 18th, 1918, was 89.66 feet. On August 19th gauge was lowered to a new zero of 85.69 feet. Zero of gauge is referred to a bench mark (elevation 99.65) painted on downstream corner of right abutment, and also to a bench mark (elevation 100.17) which is the head of a nail driven horizontally in telephone pole one hundred feet downstream from right abutment. Head of nail is about five feet above ground and is plainly marked by painted arrow.

Channel and Control—The channel is straight for about 150 feet above and 100 feet below section. Both banks are liable to overflow. Point of control is not clearly defined. Bed of stream is composed of sand. As the velocity is not high at any stage this is not liable to shift. At low stages there are three channels and at high stages five, these being formed by the bridge piers.

Discharge Measurements—Made from the bridge at high and ordinary stages with small Price meter. At low stages measurements are made at the Tretheway's Falls bridge, one mile below.

Winter Flow—Owing to the somewhat sluggish flow, ice will likely form to a great thickness. During the winter months, measurements will be made at the low water section.

Regulation—The Provincial Department of Public Works operate the dam at Baysville controlling the run off from most of the drainage area.

Accuracy—As yet only fairly well defined curve has been established here.

Observer—Wesley Morrow, Muskoka Falls P.O.

Muskoka River (South Branch) at Black's Bridge, 1918

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1918							
May 20....	McLennan, C.C..	97	1,538	1.03	92.75	1,585	.....
June 3....	Ronald, F	104	1,655	1.43	94.00	2,360	.....
July 18....	"	96	1,450	.77	91.91	1,113	.....
Aug. 19....	"	36	154	1.51	89.66	233	.....
Sept. 7....	"	39	191	2.12	90.15	402	.....

Discharge Measurements of Muskoka River (South Branch) at Tretheway's Falls in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 30....	Ronald, F	40	179	2.05	13.83	368	.....
Nov. 28....	Hatton, M.....	47	216	2.06	14.42	445	.....
Dec. 18....	Ronald, F	47	241	4.21	14.83	1,015	.....
1918							
Jan. 29....	"	37	144	1.56	13.08	224 (a)	.....
Feb. 25....	"	45	187	2.74	13.87	513 (a)	.....
April 9....	"	97	1,578	1.01	16.08	1,597	.....
April 19....	"	97	1,520	.99	15.92	1,501	.....

(a) Ice measurement.

Daily Gauge Height in feet, and Discharge in second-feet, of Muskoka River (South Branch) at Black's Bridge for 1918

Drainage Area, 668 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	13.50	280	13.75	345	14.50	630	14.34	555	13.50	280	14.00	425	14.50	630	16.08	1500	17.50	2420	92.49	1420	89.99	336	90.16	396
2	13.58	300	13.75	345	14.50	630	14.00	425	13.58	300	14.00	425	15.17	965	15.67	1250	17.50	2420	92.49	1420	89.99	336	90.16	396
3	13.58	300	13.75	345	14.50	630	13.83	369	13.58	300	13.92	397	15.67	1250	15.50	1150	*17.50	2420	92.66	1510	89.99	336	90.11	378
4	13.58	300	13.92	397	15.00	880	13.75	345	13.58	300	13.83	369	16.00	1450	15.50	1150	93.74	2180	92.66	1510	89 99	336	90.11	378
5	13.58	300	13.92	397	14.50	630	13.67	322	13.58	300	13.92	397	15.67	1250	15.50	1150	93.24	1850	92.49	1420	89.99	336	90.11	378
6	13.58	300	13.92	397	15.00	880	13.67	322	13.67	322	14.00	425	15.58	1200	15.58	1200	92.47	1410	92.08	1210	89.99	336	90.11	378
7	13.58	300	13.83	369	15.17	965	13.58	300	13.67	322	14.00	425	15.25	1000	15.67	1250	92.47	1410	92.08	1210	89.99	336	90.11	378
8	13.58	300	13.83	369	15.35	1060	13.58	300	13.67	322	14.00	425	15.25	1000	15.67	1250	92.47	1410	92.24	1290	89.99	336	90.11	378
9	13.50	280	13.83	369	15.67	1250	13.50	280	13.75	345	14.00	425	15.83	1350	15.75	1300	92.49	1420	92.49	1420	89.99	336	90.11	378
10	13.50	280	13.75	345	15.83	1350	13.50	280	13.75	345	14.00	425	16.08	1500	15.83	1350	92.49	1420	92.49	1420	89.99	336	90.11	378
11	13.50	280	13.75	345	15.83	1350	13.50	280	13.75	345	14.00	425	16.00	1450	15.92	1400	92.41	1380	92.16	1250	89.99	336	90.19	406
12	13.50	280	13.75	345	16.17	1550	13.50	280	13.67	322	14.00	425	15.67	1250	15.92	1400	92.41	1380	92.08	1210	89.99	336	90.19	406
13	13.50	280	13.75	345	16.17	1550	13.50	280	13.50	280	14.00	425	15.67	1250	16.00	1450	92.41	1380	91.58	965	89 99	336	90.36	466
14	13.50	280	13.75	345	15.67	1250	13.50	280	13.67	322	13.92	397	15.83	1350	16.00	1450	92.37	1360	91.24	815	89.91	308	90.44	494
15	13.50	280	13.67	322	15.50	1150	13.42	264	13.75	345	13.92	397	15.83	1350	16.00	1450	92.33	1340	91.91	1120	89.91	308	90.48	510
16	13.50	280	13.67	322	15.50	1150	13.42	264	13.75	345	13.83	369	15.92	1400	16.00	1450	92.33	1340	91.91	1120	89.83	280	90.44	494
17	13.58	300	13.67	322	15.25	1000	13.33	246	13.75	345	13.83	369	16.00	1450	16.00	1450	92.16	1250	91.91	1120	89.83	280	90.44	494
18	13.58	300	13.67	322	15.00	880	13.33	246	13.75	345	13.83	369	15.92	1400	16.17	1550	91.49	925	91.16	775	89.99	336	90.40	480
19	13.58	300	13.67	322	14.50	630	13.25	230	13.67	322	13.83	369	15.83	1350	16.08	1500	91.24	815	90.49	510	89.86	291	90.40	486
20	13.58	300	13.67	322	14.00	425	13.25	230	13.58	300	13.83	369	15.83	1350	16.00	1450	90.41	484	90.49	510	89.86	291	90.36	466
21	13.58	300	13.67	322	13.75	345	13.25	230	13.42	264	13.92	397	15.83	1350	16.00	1450	92.41	1380	90.41	484	89.86	291	90.36	466
22	13.58	300	13.67	322	13.75	345	13.33	246	13.50	280	13.92	397	16.00	1450	16.17	1550	92.41	1380	90.33	456	90.11	378	90.27	434
23	13.67	322	13.67	322	13.75	345	13.33	246	13.67	322	14.00	425	16.25	1600	16.50	1750	92.33	1340	90.33	456	90.11	378	90.23	420
24	13.67	322	14.00	425	13.75	345	13.42	264	13.75	345	14.00	425	16.75	1900	16.67	1850	92.41	1380	90.16	396	90.11	378	90.19	406
25	13.67	322	14.17	488	13.58	300	13.50	280	13.75	345	14.00	425	17.25	2240	16.50	1750	92.41	1380	90.08	368	90.11	378	90.19	406
26	13.67	322	14.50	630	13.58	300	13.33	246	13.75	345	14.00	425	17.75	2640	16.33	1650	92.49	1420	90.08	368	90.11	378	90.15	392
27	13.75	345	14.58	670	13.75	345	13.25	230	13.83	369	14.00	425	18.00	2860	16.17	1550	92.49	1420	90.08	368	90.11	378	90.11	378
28	13.75	345	14.58	670	13.75	345	13.17	214	13.92	397	14.00	425	17.83	2710	16.67	1850	92.49	1420	90 08	368	90.11	378	90.07	364
29	13.83	369	14.33	550	13.75	345	13.17	214	.....	....	14.00	425	17.83	2710	17.00	2070	92.49	1420	90.08	368	90.11	378	90.11	378
30	13.83	369	14.17	488	13.75	345	13.25	230	.....	....	14.17	488	17.17	2190	17.50	2420	92.49	1420	90.08	368	90.11	378	90.11	378
31	13.83	369	.....	....	14.00	425	13.33	246	.....	....	14.00	425	.....	....	17.67	2560	.....	....	89.99	336	90.16	396	.....	.....

* June 4th, change in location of gauge.

Monthly Discharge for Muskoka River (South Branch) at Black's Bridge, for year ending September 30th, 1918

Drainage Area, 668 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	369	280	307	.55	.42	.46	.53
November "	670	322	396	1.00	.48	.59	.66
December "	1,550	300	762	2.32	.45	1.14	1.31
January (1918)	555	214	282	.83	.32	.42	.48
February	397	264	324	.59	.40	.49	.51
March	488	369	411	.73	.55	.62	.71
April	2,860	630	1,562	4.28	.94	2.34	2.61
May	2,560	1,150	1,534	3.83	1.72	2.30	2.65
June	2,420	484	1,466	3.62	.72	2.19	2.44
July	1,510	336	889	2.26	.50	1.33	1.53
August	396	280	340	.59	.42	.51	.59
September	510	364	418	.76	1.54	.63	.70
The year	2,860	214	725	4.28	.32	1.08	14.73

Muskoka River (North Branch) near Port Sydney

Location—At the highway bridge near the Village of Port Sydney and ¼ mile below Mary Lake, on lot 25, concession 5, Township of Stephenson, Muskoka District.

Records Available—Discharge measurements from April, 1915. Daily gauge heights from April 16, 1915.

Drainage Area—560 square miles.

Gauge—Vertical steel staff with enamelled face graduated in feet and inches and fastened to abutment on left upstream side of bridge. Zero of gauge (elev. 6.91 feet) is referred to a bench mark (elev. 24.78 feet) painted on top of right abutment, downstream side, and a bench mark (elevation 17.73) painted on side of right abutment, upstream side.

Channel—Straight for about 1,500 feet above and 500 feet below gauging station. Both banks are high, wooded, and not liable to overflow. The bed of the channel is composed of clay and gravel.

Discharge Measurements—Made from highway bridge with a small Price current meter.

Winter Flow—Open water conditions throughout the year.

Regulation—The operation of dam at Mary Lake during certain periods of the year causes fluctuation at the gauge.

Accuracy—The rating curve is well defined, and estimates of discharge are good.

Observer—A. E. McInnes, Port Sydney.

Discharge Measurements of Muskoka River (North Branch) near Port Sydney in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Nov. 1....	Ronald, F.....	56	334	2.81	9.23	939	.....
" 27....	"	48	278	.50	7.93	140	.....
Dec. 19....	Hatton. M.R....	49	277	1.25	8.17	347	.....
1918							
Feb. 25....	Ronald. F.....	48	280	1.00	8.08	278	.....
Apr. 8....	"	58	521	5.98	12.40	3,120	.....
" 9....	"	58	515	5.89	12.31	3,032	.....
" 17....	"	58	454	5.08	11.21	2,306	.....
May 21....	McLennan. C.C..	58	358	4.77	9.95	1,609	.....
July 17....	Ronald. F.....	48	264	.67	7.83	179	.....
Aug. 20....	"	45	270	.95	7.99	256	.....
Sept. 7....	"	48	266	.55	7.83	147	.....

Daily Gauge Height in feet, and Discharge in second-feet, of Muskoka River (North Branch) near Port Sydney for 1917-8

Drainage Area, 560 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	7.79	132	9.17	915	7.79	132	8.00	230	8.00	230	8.17	324	10.25	1650	10.50	1820	9.08	855	7.99	225	8.49	500	7.66	90
2	7.79	132	9.33	1020	7.79	132	8.00	230	8.00	230	8.17	324	11.12	2260	10.42	1770	9.08	855	7.99	225	8.24	362	7.66	90
3	7.79	132	9.17	915	7.89	176	8.00	230	8.00	230	8.25	368	11.62	2610	10.08	1530	8.91	745	7.99	225	7.99	225	7.66	90
4	7.79	132	8.92	755	8.33	412	8.00	230	8.00	230	8.29	390	12.33	3110	9.83	1360	8.58	550	7.99	225	7.99	225	7.66	90
5	7.79	132	8.83	700	8.50	505	8.00	230	8.00	230	8.27	378	12.33	3110	9.92	1420	8.08	274	7.99	225	7.91	185	7.83	148
6	7.79	132	8.58	550	8.83	700	8.00	230	8.00	230	8.25	368	12.25	3050	9.88	1390	8.08	274	7.99	225	7.91	185	7.83	148
7	7.79	132	8.58	550	8.83	700	8.00	230	8.00	230	8.25	368	12.25	3050	9.83	1360	8.58	550	7.99	225	7.91	185	7.83	148
8	7.75	118	8.58	550	8.83	700	8.00	230	8.00	230	8.08	274	12.38	3140	9.75	1300	8.18	329	8.91	745	7.99	225	7.83	148
9	7.75	118	8.67	600	8.75	650	8.00	230	8.00	230	8.08	274	12.21	3020	9.75	1300	8.83	700	8.91	745	8.16	318	7.83	148
10	7.75	118	8.67	600	8.67	600	8.00	230	8.00	230	8.08	274	12.00	2880	9.16	910	8.66	595	7.99	225	8.16	318	7.83	148
11	7.62	80	8.67	600	8.58	550	8.00	230	8.00	230	8.08	274	11.88	2790	9.16	910	8.66	595	7.99	225	7.99	225	7.83	148
12	7.62	80	8.67	600	8.54	525	8.00	230	8.00	230	8.25	368	11.75	2700	9.50	1130	8.66	595	7.99	225	7.99	225	7.83	148
13	7.77	124	8.67	600	8.54	525	8.00	230	8.00	230	8.33	412	11.75	2700	9.83	1360	8.58	550	7.99	225	7.99	225	7.83	148
14	7.79	132	8.67	600	8.58	550	8.00	230	8.08	274	8.33	412	11.67	2640	9.83	1360	8.58	550	7.99	225	7.99	225	7.83	148
15	7.79	132	8.50	505	8.58	550	8.00	230	8.08	274	8.33	412	11.67	2640	9.83	1360	8.08	274	7.99	225	7.99	225	7.83	148
16	7.79	132	8.50	505	8.50	505	8.00	230	8.08	274	8.25	368	11.67	2640	9.66	1240	8.08	274	7.99	225	7.99	225	7.83	148
17	7.79	132	8.42	461	8.58	550	8.00	230	8.08	274	8.25	368	11.67	2640	9.75	1300	8.08	274	7.91	185	7.99	225	7.83	148
18	7.79	132	8.42	461	8.58	550	8.00	230	8.08	274	8.25	368	11.25	2350	9.66	1240	8.16	318	7.91	185	7.99	225	7.91	185
19	7.79	132	8.42	461	8.50	505	8.00	230	8.08	274	8.37	434	11.25	2350	10.25	1650	9.58	1180	7.91	185	7.99	225	8.49	500
20	7.83	148	8.33	412	8.38	439	8.00	230	8.08	274	8.57	545	10.67	1940	10.21	1620	8.99	800	7.91	185	7.99	225	8.08	274
21	7.92	190	8.00	230	8.33	412	8.00	230	8.00	230	8.92	755	10.67	1940	9.91	1410	7.91	185	7.83	148	7.99	225	7.91	185
22	8.62	570	8.00	230	8.33	412	8.00	230	8.00	230	9.46	1100	9.62	1210	9.83	1360	7.91	185	7.91	185	7.83	148	7.91	185
23	8.88	730	8.00	230	8.33	412	8.00	230	8.08	274	9.50	1130	9.08	855	8.91	745	7.91	185	7.91	185	7.91	185	7.91	185
24	8.70	620	8.00	230	8.33	412	8.00	230	8.08	274	9.58	1180	9.08	855	8.83	700	7.91	185	7.91	185	7.91	185	7.91	185
25	8.58	550	8.00	230	8.33	412	8.00	230	8.08	274	9.92	1420	8.67	600	9.33	1020	7.91	185	7.66	90	7.83	148	7.99	225
26	8.58	550	8.00	230	8.33	412	8.00	230	8.08	274	9.92	1420	8.67	600	9.41	1020	7.91	185	7.83	148	7.83	148	7.99	225
27	8.58	550	7.83	148	8.33	412	8.00	230	8.17	324	9.92	1420	8.50	505	10.03	1530	7.91	185	7.83	148	7.83	148	8.41	456
28	8.92	755	7.83	148	8.33	412	8.00	230	8.17	324	10.00	1480	8.50	505	10.74	1990	8.33	412	7.91	185	7.83	148	8.41	456
29	8.67	600	7.83	148	8.33	412	8.00	230	.....	....	10.00	1480	8.83	700	10.41	1760	8.33	412	8.49	500	7.83	148	7.83	148
30	8.67	600	7.79	132	8.33	412	8.00	230	.....	....	10.00	1480	9.75	1300	10.16	1590	7.95	205	8.49	500	7.66	90	7.83	148
31	8.67	600	.....	.....	8.33	412	8.00	230	.....	....	10.21	1620	.....	....	10.08	1530	.....	....	8.49	500	7.66	90	.....	...

Monthly Discharge for Muskoka River (North Branch) at Port Sydney for year ending September 30th, 1918

Drainage Area, 560 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile.			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	755	80	284	1.35	.14	.51	.59
November "	1,020	132	477	1.82	.24	.85	.95
December "	700	132	467	1.25	.24	.83	.96
January (1918)	230	230	230	.41	.41	.41	.47
February	324	230	254	.58	.41	.45	.47
March	1,620	274	703	2.89	.49	1.26	1.45
April	3,140	505	2,078	5.61	.90	3.71	4.14
May	1,990	700	1,354	3.55	1.25	2.42	2.79
June	1,180	185	449	2.11	.33	.80	.89
July	745	90	263	1.33	.16	.47	.54
August	500	90	214	.89	.16	.38	.44
September	500	90	188	.89	.16	.34	.38
The year	3,140	80	580	5.61	.14	1.04	14.06

Napanee River near Napanee

Location—At Mink's Bridge, three miles from Napanee, near lot 1, concession 1, Township of Camden, County of Addington.

Records Available—Discharge measurements from August, 1915, and gauge readings from September 8, 1915.

Drainage Area—300 square miles.

Gauge—A boxed chain gauge on the right bank of the river 400 feet above the section. Nine feet of standard gauge plates. When the gauge reads zero the elevation of the water is 97.93. Three feet of standard gauge plates secured to 2 x 6 scantling fastened to tree 10 feet west of chain gauge. This is used for extreme high water.

Channel and Control—The channel is curved above the section to within 20 feet of the bridge, and is straight for 300 feet below. The right bank is high, while the left is comparatively low and liable to overflow. The bed of the stream is composed of rocks and gravel, not likely to shift.

Discharge Measurements—Made by wading at low stages and from bridge at high stages.

Winter Flow—Relation of gauge height to discharge is affected by ice.

Regulation—There are several power developments on the upper part of the river, and also lumber dams on tributary waters.

Accuracy—Two daily readings give only fair mean daily gauge heights.

Observer—Mrs. Dan. O'Shaughnessy, Napanee.

Discharge Measurements of Napanee River at Mink's Bridge in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 10....	Ronald, F.....	55	28	1.07	100.98	30	.....
Nov. 16....	"	64	112	1.40	102.26	158	.....
Dec. 8....	"	64	110	1.22	102.28	134(a)	.....
1918							
Feb. 12....	"	62	48	1.06	102.01	51(a)	.....
Mar. 21....	"	64	426	2.73	107.15	1,164(b)	.....
Mar. 27....	"	64	520	4.66	108.68	2,425	.....
June 13....	"	64	142	1.72	102.68	244	.....
Sept. 26....	"	64	88	1.40	101.87	123	.....

(a) Ice measurement.
(b) Backwater from ice below section.

Daily Gauge Height in feet and Discharge in Second-feet of Napanee River near Napanee for 1917-8

Drainage Area, 300 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	101.17	42	103.45	424	102.39	192	102.35	84	102.10	59	103.64	301	109.19	2600	103.93	565	102.68	246	102.26	170	101.72	92	101.10	38
2	101.08	37	103.45	424	102.63	226	102.31	80	102.10	59	103.35	230	109.64	2820	103.64	477	102.60	230	102.18	157	101.68	88	101.01	33
3	101.00	32	103.45	424	102.59	210	102.26	75	102.05	55	103.35	221	109.35	2700	103.26	376	102.68	246	102.18	157	101.76	97	101.30	51
4	101.13	40	102.38	191	102.55	203	103.26	75	102.01	52	103.43	226	109.06	2590	103.26	376	102.64	238	102.18	157	101.64	83	101.26	48
5	101.04	34	102.55	221	102.39	167	102.26	75	101.91	49	103.76	283	109.05	2580	103.10	338	102.60	230	102.18	157	101.56	75	101.43	62
6	101.08	37	102.55	221	102.31	153	102.22	71	101.93	46	103.68	256	109.01	2560	103·01	317	102.68	246	102.18	157	101.64	83	101.76	97
7	101.00	32	102.43	199	102.10	114	102.26	75	101.80	38	103.60	230	108.93	2530	103.22	366	102.68	246	102.10	143	101.80	102	101.76	97
8	100.96	30	102.40	194	102.10	108	102.18	67	101.68	31	103.60	230	108.60	2400	103.55	452	102.51	214	102.18	157	101.76	97	101.64	83
9	101.00	32	101.93	118	102.14	113	102.26	75	101.80	38	103.60	230	108.26	2260	103.43	419	102.60	230	102.22	163	101.64	83	101.60	79
10	101·00	32	101.59	78	102.26	130	102.26	75	101.79	37	103.55	221	108.01	2160	103.35	398	102.64	238	102.26	170	101.43	62	101.72	92
11	101.08	37	102.09	142	102.26	122	102.35	84	102.10	59	103.47	207	107.60	2000	103.35	398	102.60	230	102.26	170	101.26	48	101.51	70
12	101.17	42	102.30	177	102.20	125	102.35	84	102.06	56	103.64	238	107.39	1920	103.43	419	102.72	254	102.22	163	101.26	48	101.51	70
13	101.17	42	102.17	155	102.18	112	102.22	71	102.64	120	104.05	326	107.10	1800	103.35	398	102.60	230	102.31	179	101.26	48	101.51	70
14	101.17	42	102.09	142	102.31	122	102.18	67	102.76	137	104.26	376	106.76	1660	103.35	398	102.60	230	102.26	170	101.22	45	101.51	70
15	101.25	48	102.17	155	102.43	140	102.18	67	102.76	137	104.26	376	106.68	1630	103.30	386	102.60	230	102.26	170	101.35	55	101.43	62
16	101.42	61	102.22	163	102.22	104	102.18	67	102.76	137	104.26	352	106.27	1470	103.22	366	102.22	163	102.26	170	101.35	55	101.43	62
17	101.33	53	102.26	170	102.18	106	102.26	75	102.76	137	104.30	338	105.97	1350	103.06	329	102.25	168	102.35	186	101.23	46	101.85	108
18	101.25	48	102.26	170	102.26	122	102.26	75	102.68	125	104.76	427	105.72	1250	102.76	262	102.25	168	102.26	170	101.10	38	101.76	97
19	101.83	106	102.35	186	102.35	143	102.26	75	102.81	145	105.01	469	105.60	1200	102.76	262	102.17	155	102.26	170	101.01	33	101·84	107
20	102.17	155	102.43	199	102.31	137	102.31	80	103.35	240	105.76	670	105.26	1060	102.55	221	102.17	155	102.26	170	101.35	55	102.05	136
21	102.08	140	102.43	199	102.26	130	102.32	80	103.39	248	106.89	1060	105.10	1000	102.43	199	102.17	155	102.26	170	101.10	38	102.26	170
22	102.00	128	102.26	170	102.31	130	102.13	67	103.18	208	109.56	2260	104.93	930	102.60	230	102.35	168	102.22	163	100.85	25	102.10	143
23	102.04	134	102.35	177	102.26	115	102.04	54	103.18	208	109.43	2330	104.80	880	102.51	214	102.26	170	102.18	157	100.85	25	102.14	150
24	102.00	128	102.35	177	102.26	109	102.06	56	102.85	152	109.51	2440	104.72	850	102.43	199	102.18	157	102.14	150	100.85	25	102.18	157
25	102.29	175	102.35	177	102.26	103	102.10	59	102.89	158	109.51	2520	104.47	750	102.43	199	102.18	157	102.01	130	100.72	20	102.01	130
26	103.00	315	102.28	165	102.26	97	102.10	59	105.85	350	109.68	2670	104.39	720	102.47	207	102.18	157	102.01	130	100.85	25	102.05	136
27	103.08	333	102.31	170	102.31	97	102.10	59	104.47	264	108.64	2340	104.35	705	102.60	230	102.14	150	101.77	98	100.80	23	102.10	143
28	103.17	354	102.26	162	102.35	96	102.10	59	103.58	288	108.52	2370	104.26	670	102.51	214	102.10	143	101.35	55	101.06	36	102.10	143
29	103.25	374	102.26	162	102.35	84	102.10	59	.....	....	108.76	2460	104.10	620	102.47	207	102.18	157	101.43	62	101.34	54	102.10	143
30	103.46	427	102.26	170	102.26	75	102.10	59	.....	....	108.76	2460	104.05	600	102.64	238	102.18	157	101.78	100	101.26	48	102.18	157
31	103.33	394	.....	....	102.35	84	102.10	59	.....	....	108.93	2530	.....	....	102.76	262	.....	....	101.89	113	101.26	48	.....	....

Monthly Discharge of Napanee River near Napanee for year ending Sept. 30th, 1918

Drainage Area, 300 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	427	30	125	1.42	.10	.42	.48
November "	424	78	196	1.41	.26	.65	.73
December "	226	75	128	.75	.25	.43	.50
January (1918)	84	54	70	.28	.18	.23	.27
February	350	31	130	1.17	.10	.43	.45
March.....	2,670	207	1,021	8.90	.69	3.40	3.92
April.....	2,820	600	1,609	9.40	2.00	5.36	5.98
May.....	565	199	320	1.88	.66	1.07	1.23
June	254	143	197	.85	.48	.66	.74
July.....	186	55	149	.62	.18	.50	.58
August	102	20	55	.34	.07	.18	.21
September.....	170	33	100	.57	.11	.33	.37
The year	2,820	20	341	9.40	.07	1.14	15.47

Petawawa River near Petawawa

Location—About 1½ miles southwest of Petawawa station above C.P.R. bridge, near lot 15, concession 7, township of Petawawa, County of Renfrew.

Records Available—Discharge measurements from October, 1915, and daily gauge heights from November 5, 1915.

Drainage Area—1,572 square miles.

Gauge—Temporary mark used from December 15, 1915, to February 29, 1916, to obtain water elevations afterwards reduced to same datum as permanent gauge, screwed to plank, bolted to large rock in river, back of Rantz's house, 1,000 feet above the station, and 200 feet above the head of the rapids. This gauge has been used for gauge readings since March 1, 1916.

Channel and Control—The controlling section is a few hundred yards above the metering section. The river is straight for a few hundred feet each side of the section, but is crooked and fast for two miles below the section. The soundings for depths are taken for each metering as the water is fast and the river bed of stones may change slightly between meterings, and the depths do not change the same as the gauge readings.

Discharge Measurements—The discharge measurements for normal and low flows, summer and winter, are made by wading in fast water near the end of the straight stretch in the river downstream from the gauge. At high water measurements are made from the road bridge leading to Petawawa Military Camp.

Winter Flow—The control here is at fast water and only slightly affected by ice.

Accuracy—Gauge readings twice daily give good mean daily gauge height as the fluctuation at the gauge is slow.

Observer—Elsa Rantz, Petawawa.

Discharge Measurements of Petawawa River near Petawawa in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Nov. 19....	Ronald, F	157	198	2.83	101.64	561	.....
Dec. 13....	"	143	182	2·87	101.58	522 (a)	.....
1918							
Feb. 21....	"	144	170	2.73	101.50	464 (b)	.....
April 4....	"	164	500	3.43	102.71	1,716	.....
" 17....	Hatton, M.....	164	631	3.54	102.90	2,234	.....
May 15....	Ronald, F.....	164	598	4.51	103.29	2,698	.....

(a) Ice above section.
(b) Ice measurement.

Daily Gauge Height in feet and Discharge in second-feet of Petawawa River near Petawawa for 1917-8

Drainage Area, 1,572 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	101.58	520	101.75	635	101.67	580	101.50	470	101.50	470	101.50	470	101.96	805	102.92	2030	103.25	2640	102.83	1890	102.00	840	101.62	545
2	101.50	470	101.75	635	101.67	580	101.50	470	101.50	470	101.50	470	102.13	970	102.87	1950	103.25	2640	102.75	1760	102.00	840	101.66	570
3	101.50	470	101.71	605	101.67	580	101.54	494	101.50	470	101.50	470	102.56	1480	102.83	1890	103.17	2480	102.75	1760	101.96	805	101.66	570
4	101.50	470	101.67	580	101.67	580	101.58	520	101.50	470	101.50	470	102.67	1640	102.83	1890	103.08	2310	102.67	1650	101.92	770	101.66	570
5	101.50	470	101.67	580	101.67	580	101.50	470	101.50	470	101.50	470	102.75	1760	102.83	1890	103.04	2240	102.67	1650	101.92	770	101.66	570
6	101.54	494	101.67	580	101.67	580	101.58	520	101.50	470	101.50	470	102.75	1760	102.83	1890	103.00	2170	102.58	1510	101.92	770	101.66	570
7	101.58	520	101.67	580	101.67	580	101.58	520	101.50	470	101.50	470	102.79	1820	102.83	1890	103.00	2170	102.54	1460	101.92	770	101.66	570
8	101.58	520	101.67	580	101.58	520	101.58	520	101.50	470	101.50	470	102.83	1890	102.87	1950	103.00	2170	102.50	1400	101.92	770	101.67	580
9	101.58	520	101.67	580	101.58	520	101.58	520	101.50	470	101.50	470	102.83	1890	102.92	2030	103.00	2170	102.50	1400	101.92	770	101.67	580
10	101.58	520	101.67	580	101.58	520	101.58	520	101.50	470	101.50	470	102.83	1890	102.92	2030	102.96	2100	102.54	1460	101.92	770	101.67	580
11	101.50	470	101.67	580	101.58	520	101.58	520	101.50	470	101.50	470	102.83	1890	102.86	1940	102.87	1950	102.54	1460	101.92	770	101.58	520
12	101.50	470	101.67	580	101.58	520	101.58	520	101.50	470	101.50	470	102.83	1890	103.13	2410	102.83	1890	102.54	1460	101.92	770	101.58	520
13	101.58	520	101.67	580	101.58	520	101.58	520	101.50	470	101.50	470	102.75	1760	103.17	2480	102.83	1890	102.50	1400	101.92	770	101.58	520
14	101.58	520	101.67	580	101.58	520	101.58	520	101.50	470	101.50	470	102.75	1760	103.25	2640	102.92	2030	102.50	1400	101.92	770	101.58	520
15	101.58	520	101.67	580	101.58	520	101.58	520	101.50	470	101.50	470	102.79	1820	103.29	2720	102.92	2030	102.50	1400	101.83	695	101.58	520
16	101.58	520	101.67	580	101.58	520	101.58	520	101.50	470	101.50	470	102.83	1890	103.33	2800	103.00	2170	102.42	1300	101.83	695	101.58	520
17	101.58	520	101.67	580	101.58	520	101.58	520	101.50	470	101.50	470	102.92	2030	103.33	2800	103.00	2170	102.42	1300	101.83	695	101.71	605
18	101.58	520	101.67	580	101.58	520	101.58	520	101.50	470	101.50	470	102.92	2030	103.33	2800	103.00	2170	102.33	1190	101.83	695	101.75	635
19	101.58	520	101.67	580	101.58	520	101.58	520	101.50	470	101.50	470	102.92	2030	103.37	2890	102.92	2030	102.25	1100	101.83	695	101.75	635
20	101.58	520	101.67	580	101.58	520	101.58	520	101.50	470	101.50	470	102.92	2030	103.42	2990	102.79	1820	102.21	1050	101.83	695	101.75	635
21	101.58	520	101.67	580	101.67	580	101.58	520	101.50	470	101.50	470	102.92	2030	103.42	2990	102.67	1640	102.21	1050	101.83	695	101.75	635
22	101.62	545	101.67	580	101.67	580	101.58	520	101.50	470	101.50	470	102.92	2030	103.42	2990	102.67	1640	102.17	1010	101.83	695	101.75	635
23	101.67	580	101.67	580	101.67	580	101.58	520	101.50	470	101.50	470	102.92	2030	103.37	2890	102.75	1760	102.17	1010	101.83	695	101.71	605
24	101.67	580	101.67	580	101.67	580	101.58	520	101.50	470	101.50	470	102.92	2030	103.33	2800	102.83	1890	102.17	1010	101.83	695	101.67	580
25	101.67	580	101.67	580	101.63	550	101.54	494	101.50	470	101.50	470	102.92	2030	103.29	2720	102.83	1890	102.13	970	101.83	695	101.67	580
26	101.67	580	101.71	605	101.63	550	101.50	470	101.50	470	101.50	470	102.92	2030	103.25	2640	102.83	1890	102.08	920	101.75	635	101.67	580
27	101.75	635	101.67	580	101.63	550	101.50	470	101.50	470	101.54	494	102.92	2030	103.25	2640	102.75	1760	102.04	880	101.66	570	101.67	580
28	101.75	635	101.58	520	101.58	520	101.50	470	101.50	470	101.58	520	102.92	2030	103.25	2640	102.75	1760	102.00	840	101.58	520	101.71	605
29	101.75	635	101.58	520	101.54	494	101.50	470	.....	....	101.63	550	102.92	2030	103.25	2640	102.75	1760	102.00	840	101.58	520	101.75	635
30	101.75	635	101.63	550	101.50	470	101.50	470	.....	....	101.67	580	102.92	2030	103.25	2640	102.75	1760	102.00	840	101.62	545	101.83	695
31	101.75	635	.....	....	101.54	494	101.50	470	.....	....	101.75	635	.....	....	103.25	2640	.....	....	102.00	840	101.58	520	.....	....

Monthly Discharge for Petawawa River near Petawawa for year ending Sept. 30th, 1918

Drainage Area, 1,572 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)..	635	470	537	.40	.30	.34	.39
November " ..	635	520	580	.40	.33	.37	.41
December " ..	580	470	541	.37	.30	.34	.39
January (1918)...	520	470	504	.33	.30	.32	.37
February	470	470	470	.30	.30	.30	.31
March	635	470	484	.40	.30	.31	.36
April	2,030	805	1,844	1.29	.51	1.17	1.31
May	2,990	1,890	2,456	1.90	1.20	1.56	1.80
June	2,640	1,640	2,033	1.68	1.04	1.29	1.44
July	1,890	840	1,265	1.20	.53	.80	.92
August	840	520	707	.53	.33	.45	.52
September	695	545	582	.44	.35	.37	.41
The year	2,990	470	1,002	1.90	.30	.64	8.65

Tay River near Glen Tay

Location—Near lots 20 and 21, concession 11, Township of Bathurst, County of Lanark, At the highway bridge north of the Village of Glen Tay, and east of the auxiliary plant of the Canadian Electric & Water Company, Limited, of Perth and Ottawa.

Records Available—Discharge measurements July, 1915, and gauge readings from July 10, 1915.

Drainage Area—204 square miles.

Gauge—Vertical steel staff 0 to 3 feet fastened to the pier of bridge one foot above section.

Channel and Control—The channel is straight from the dam 150 feet above and straight for 250 feet below the section. The banks are high, and not liable to overflow. The bed of the river is composed of shale and stones, not shifting. The flow is confined between the bridge abutments at all stages. The control is a short distance below the section, and the flood flow is likely to disturb it to some extent.

Discharge Measurements—Made by wading at ordinary stages, and from the bridge at very high stages.

Winter Flow—Channel at section remains free from ice during winter, but relation of gauge height to discharge is affected by ice formation below the section.

Regulation—The river is dammed immediately above the section and one mile further up, for power purposes, and the Department of Railways and Canals operate a dam at the foot of Bob's Lake for regulating canal purposes.

Accuracy—The open-water rating will be very good.

Observer—Paul Griffin, Manion P.O.

Discharge Measurements of Tay River near Glen Tay in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 3....	Ronald, F.....	36	29	2.15	93.96	62	.....
Nov. 14....	"	40	60	3.38	94.42	203	.....
Dec. 4....	Hatton, M.R....	40	61	3.94	94.43	239	.....
1918							
Feb. 13....	Ronald, F.....	36	39	1.72	94.32	67 (a)	.....
Mar. 26....	"	46	178	3.55	96.98	632	.....
June 13....	"	40	43	3.21	94.21	138	.....
Sept. 24....	"	42	58	5.29	94.46	307	.....

(a) Ice measurement.

Daily Gauge Height in feet and Discharge in second-feet of Tay River near Glen Tay for 1917-8

Drainage Area, 204 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	94.17	123	94.50	238	94.26	154	93.88	47	93.92	53	95.73	565	96.92	1080	94.40	203	94.46	224	94.38	196	94.44	217	94.38	196
2	93.96	62	94.46	224	94.25	150	94.21	136	93.92	53	95.82	595	96.88	1070	94.42	210	94.46	224	94.64	287	94.42	210	94.38	196
3	94.17	123	94.44	217	94.29	164	93.88	47	93.90	49	95.59	515	96.76	1030	94.38	196	94.42	210	94.64	287	94.25	150	94.38	196
4	94.17	123	94.40	203	94.38	196	93.88	47	93.98	66	95.36	434	96.46	925	94.34	182	94.40	203	94.64	287	94.25	150	94.40	203
5	94.19	130	94.38	196	94.38	196	93.90	49	94.01	73	95.40	448	95.84	705	94.17	123	94.40	203	94.64	287	94.30	168	94.32	175
6	94.17	123	94.36	189	94.38	196	93.90	49	94.03	79	95.19	374	95.59	620	94.19	130	94.38	196	94.42	210	94.46	224	94.44	217
7	93.92	53	94.30	168	94.32	175	93.90	49	94.00	70	95.09	340	95.42	560	94.38	196	94.42	210	94.42	210	94.46	224	94.46	224
8	94.15	116	94.19	130	94.34	182	93.90	49	94.00	60	95.07	332	95.51	590	94.26	154	94.34	182	94.46	224	94.42	210	94.41	206
9	94.13	110	94.40	203	94.28	161	93.92	53	94.19	97	94.96	294	95.44	565	94.38	196	94.34	182	94.46	224	94.26	154	94.46	224
10	94.13	110	94.38	196	94.19	130	93.90	49	94.36	136	94.77	228	95.50	590	94.13	110	94.34	182	94.46	224	94.42	210	94.46	224
11	93.96	62	94.13	110	94.25	150	93.90	49	94.21	73	94.28	161	95.21	486	94.33	178	94.43	214	94.46	224	94.40	203	94.50	238
12	93.98	66	94.33	178	94.26	154	93.98	66	94.30	85	94.69	304	95.15	466	94.32	175	94.46	224	94.46	224	94.44	217	94.55	256
13	94.25	150	94.05	85	94.30	168	94.03	79	94.34	82	94.98	406	95.09	444	94.38	196	94.49	234	94.53	248	94.44	217	94.55	256
14	94.17	123	94.05	85	94.32	175	93.98	66	94.34	82	95.15	466	95.05	430	94.28	161	94.43	214	94.38	196	94.40	203	94.55	256
15	94.21	136	94.19	130	94.32	175	93.96	62	94.53	144	94.95	396	95.05	430	94.42	210	94.43	214	94.51	242	94.38	196	94.55	256
16	94.21	136	94.19	130	94.09	97	93.98	66	94.48	126	95.11	452	95.05	430	94.26	154	94.25	150	94.48	231	94.38	196	94.55	256
17	94.15	116	94.21	136	94.44	217	93.98	66	94.69	200	95.03	424	94.96	399	94.42	210	94.43	214	94.44	217	94.36	189	94.55	256
18	94.15	116	94.00	70	94.34	182	93.98	66	94.53	144	95.11	452	94.88	371	94.42	210	94.38	196	94.42	210	94.15	116	94.57	262
19	94.36	189	94.29	164	94.36	189	93.96	62	94.80	238	95.16	469	94.82	350	94.21	136	94.31	172	94.42	210	94.34	182	94.53	248
20	94.46	224	94.35	186	94.34	182	93.98	66	94.86	259	95.21	486	94.75	326	94.40	203	94.29	164	94.40	203	94.32	175	94.55	256
21	94.30	168	94.13	110	94.42	210	94.05	85	95.03	318	95.75	675	94.69	304	94.38	196	94.32	175	94.38	196	94.30	168	94.57	262
22	94.28	161	94.33	178	94.42	210	94.05	85	95.05	326	96.58	965	94.80	343	94.34	182	94.29	164	94.40	203	94.30	168	94.53	248
23	94.21	136	94.36	189	94.11	103	94.03	79	94.90	273	97.21	1190	94.69	304	94.26	154	94.29	164	94.40	203	94.32	175	94.55	256
24	94.40	203	94.13	110	94.19	130	93.96	62	94.61	172	97.58	1320	94.63	284	94.23	144	94.17	123	94.40	203	94.30	168	94.48	231
25	94.38	196	94.35	186	94.17	123	93.98	66	94.75	220	97.30	1220	94.55	256	94.21	136	94.33	178	94.21	136	94.32	175	94.48	231
26	94.44	217	94.23	144	94.34	182	93.98	66	95.26	399	96.96	1100	94.50	238	94.23	144	94.29	164	94.38	196	94.32	175	94.48	231
27	94.36	189	94.19	130	94.05	85	93.98	66	95.34	427	96.59	970	94.46	224	94.42	210	94.33	178	94.32	175	94.32	175	94.53	248
28	94.40	203	94.43	214	94.21	136	94.00	70	95.34	427	96.24	845	99.42	210	94.46	224	94.33	178	94.34	182	94.34	182	94.46	224
29	94.44	217	94.38	196	94.21	136	93.94	57	.....	....	96.34	880	99.49	217	94.48	231	94.19	130	94.36	189	94.36	189	94.40	203
30	94.59	270	94.11	103	93.96	62	93.96	62	.....	....	96.88	1070	99.42	210	94.51	242	94.23	144	94.17	123	94.38	196	94.46	224
31	94.59	270	.....	....	94.23	144	93.92	53	.....	....	96.92	1080	.....	....	94.46	224	.....	....	94.40	203	94.38	196	.....	.....

Monthly Discharge of Tay River near Glen Tay for year ending Sept. 30th, 1918

Drainage Area, 204 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	224	53	149	1.10	.26	.73	.84
November "	238	70	160	1.17	.34	.78	.87
December "	217	62	159	1.06	.30	.78	.90
January (1918)	136	47	64	.67	.23	.31	.36
February	427	49	169	2.09	.24	.83	.86
March	1,320	161	628	6.47	.79	3.08	3.55
April	1,080	210	482	5.29	1.03	2.36	2.36
May	242	123	181	1.19	.60	.89	1.03
June	234	123	187	1.15	.60	.92	1.03
July	287	123	215	1.41	.60	1.05	1.21
August	224	116	186	1.10	.57	.91	1.05
September	262	175	232	1.28	.86	1.14	1.27
The year	1 320	47	234	6.47	.23	1.15	15.75

York River near Bancroft

Location—At the highway bridge one and a half miles below Bancroft, near lots 53 and 54, west of the Hastings Road, Township of Faraday, County of Hastings.

Records Available—Discharge measurements from July, 1915. Daily gauge heights from July 16, 1915.

Drainage Area—374 square miles.

Gauge—Vertical standard gauge plates 0 to 6 ft. secured on the upstream face of the right bridge pier near the west corner.

Channel and Control—The channel is straight for 400 feet above and 250 feet below the section. The banks are high and sandy, not liable to overflow. The bed is composed of gravel. Flow takes places in three channels under the bridge at high stages, and in two channels at lower stages.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—Ice materially affects the open-water relation of gauge heights to discharge, and frazil ice at times makes meterings difficult.

Regulation—The dam at Bancroft gives very small storage, and the plants there do not use the entire flow. On account of the electrical plant working at night, and the other mills during the day, daily gauge readings give fairly accurate figures for the mean daily stage. Some of the tributary streams are controlled by dams for storage and driving purposes for the lumber industry.

Accuracy—As the river bed is composed of gravel, slight movement no doubt takes place without changing the general profile and section.

Observer—A. R. McMillan, Bancroft.

Discharge Measurements of York River near Bancroft in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 3....	Ronald, F.....	63	192	.76	100.92	145	.....
Dec. 7....	"	68	365	1.13	103.77	414 (a)	.....
1918							
Feb. 6....	Hatton, M.....	56	170	.85	102.17	145 (a)	.....
Mar. 7....	Ronald, F.....	55	200	.70	102.50	148 (a)	.....
April 13....	"	67	448	2.15	104.50	965	.....
May 8....	"	70	267	1.45	102.04	386	.....
Sept. 27....	Hatton, M.....	65	245	1.28	101.67	317	.....

(a) Ice measurement.

Daily Gauge Height in feet and Discharge in second-feet of York River near Bancroft for 1917-8

Drainage Area, 374 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	100.96	164	101.08	186	103.46	360	102.79	266	101.92	105	102.54	179	102.96	580	102.31	432	103.75	780	103.03	595	102.33	436	102.17	403
2	100.96	164	101.08	186	103.21	310	102.75	254	102.10	135	102.51	173	103.75	780	101.94	356	102.87	560	104.46	990	101.75	318	102.29	428
3	100.90	153	101.04	179	103.54	376	102.58	224	102.21	155	102.42	157	103.62	745	102.00	368	102.87	560	104.17	905	101.73	314	103.58	735
4	100.92	157	101.00	171	103.04	276	102.50	209	102.25	162	102.47	166	104.04	865	102.25	420	101.87	342	104.08	880	101.69	306	103.04	600
5	100.96	164	101.03	177	102.88	244	102.50	209	102.25	162	102.46	164	104.00	855	102.19	407	101.83	334	104.00	855	101.66	300	103.58	735
6	100.98	167	101.00	171	102.79	226	102.46	201	102.19	151	102.58	186	104.08	880	102.04	376	101.83	334	103.83	805	101.58	284	103.66	760
7	101.05	180	100.96	164	103.67	403	102.44	198	102.19	151	102.54	160	104.13	895	102.04	376	101.83	334	103.42	690	101.50	268	102.83	550
8	101.00	171	100.98	167	104.00	472	102.48	205	102.21	155	102.58	167	104.21	920	102.04	376	101.83	334	103.33	670	101.66	300	101.91	350
9	100.96	164	101.00	171	103.48	364	102.38	186	102.15	144	102.58	167	.....	.....	102.00	368	101.83	334	103.33	670	101.71	310	101.71	310
10	100.75	126	100.97	166	103.69	407	102.33	177	102.25	162	102.16	96	.....	.....	102.13	394	101.79	326	103.25	650	101.69	306	101.58	284
11	100.92	157	100.94	160	104.08	489	102.29	169	102.25	162	102.67	184	.....	.....	102.50	472	101.88	344	103.33	670	101.66	300	101.50	268
12	100.71	120	100.96	164	104.13	500	102.21	155	102.21	155	102.54	160	.....	.....	102.66	505	101.85	338	103.35	670	101.71	310	101.50	268
13	101.13	196	100.98	167	104.17	510	102.25	162	102.46	201	102.71	192	.....	.....	102.75	530	102.18	405	102.66	505	101.63	294	101.58	284
14	101.00	171	101.00	171	104.08	489	102.31	173	102.50	209	102.67	184	104.53	1010	102.87	560	102.24	417	102.50	472	101.71	310	101.67	302
15	101.04	179	101.00	171	104.17	487	102.19	151	102.58	224	102.70	190	104.60	1030	103.08	605	102.12	392	102.48	468	102.12	392	101.67	302
16	101.04	179	100.92	157	104.62	595	102.21	155	102.42	175	102.63	177	104.70	1060	103.62	745	101.80	328	102.47	466	102.29	428	101.67	302
17	101.04	179	100.90	153	104.75	620	102.21	155	102.35	162	102.62	175	104.33	950	103.88	820	101.75	318	102.47	466	102.46	464	101.67	302
18	100.92	157	100.96	146	104.44	550	102.08	132	102.33	158	102.71	192	103.25	650	104.71	1060	101.50	268	101.79	326	102.58	489	101.67	302
19	101.04	179	100.96	146	104.00	451	102.17	148	102.38	167	102.75	200	103.29	660	104.75	1080	101.46	260	101.71	310	102.54	480	101.65	298
20	101.04	179	100.98	149	103.50	368	102.00	118	102.58	205	102.67	184	103.61	745	104.12	890	101.42	252	101.75	318	101.87	342	101.58	284
21	101.04	179	100.96	128	102.61	211	102.08	132	102.42	175	102.75	200	103.77	790	102.58	489	101.42	252	101.75	318	102.79	540	101.54	276
22	101.08	186	100.95	126	102.21	155	102.04	125	102.35	162	102.79	207	104.25	930	101.96	360	101.67	302	101.75	318	103.04	600	101.50	268
23	101.04	179	100.96	128	102.21	173	102.08	132	102.33	158	102.63	234	104.13	895	101.58	284	101.62	292	101.75	318	102.66	505	101.50	268
24	101.00	171	101.25	126	102.04	160	102.00	118	102.38	167	102.43	254	104.12	890	101.88	344	101.62	292	101.75	318	103.13	620	101.62	292
25	101.04	179	103.79	428	101.88	149	101.96	112	102.40	171	102.23	274	104.08	880	101.88	344	101.47	262	101.73	314	101.46	260	101.54	276
26	101.01	173	104.08	489	102.46	201	101.96	112	102.62	194	102.00	288	103.78	790	102.00	368	101.48	264	101.75	318	102.08	384	101.62	292
27	101.01	173	104.12	497	102.42	194	101.85	94	102.50	171	101.65	258	102.70	515	102.83	550	101.50	268	101.73	314	103.58	735	101.65	298
28	100.97	166	103.83	436	102.42	194	101.90	102	102.52	175	101.66	300	102.31	432	102.79	540	101.62	292	101.75	318	103.42	690	101.62	292
29	101.04	179	103.62	392	102.50	209	101.96	112	.....	.....	102.08	384	102.27	424	103.46	700	101.71	310	101.85	338	102.75	530	101.60	288
30	101.04	179	103.50	368	102.92	292	101.98	115	.....	.....	102.25	420	102.31	432	103.74	790	102.29	428	102.08	384	102.37	445	101.50	268
31	101.04	179	.....	.....	102.83	274	101.90	102	.....	.....	102.50	472	.....	.....	103.83	805	.....	.....	102.00	368	102.17	403	.....	.....

Monthly Discharge for York River near Bancroft for year ending Sept. 30th, 1918

Drainage Area, 374 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per square mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October... (1917)	196	120	169	.52	.32	.45	.52
November "	497	126	215	1.33	.34	.57	.64
December "	620	149	345	1.66	.40	.92	1.06
January ..(1918)	266	94	158	.71	.25	.42	.48
February	224	105	167	.60	.28	.45	.47
March.....	272	96	218	1.26	.26	.58	.67
April	1,060	424	784	2.83	1.13	2.09	2.33
May.....	1,080	284	539	2.89	.76	1.44	1.66
June	780	252	351	2.09	.67	.94	1.05
July.....	990	310	516	2.65	.83	1.39	1.60
August	735	260	408	1.97	.70	1.09	1.26
September.....	760	268	363	2.03	.72	.97	1.08
The year	1,080	94	348	2.89	.25	.93	12.62

Regular Stations

NORTHERN ONTARIO DISTRICT

River	Location	Drainage Area Sq.Miles	Township	District
aux Sables	at Massey	524	Salter	Sudbury
Blanche	near Englehart	430	Evanturel	Temiskaming
Frederickhouse	at Frederickhouse	1,260	Clute	"
Kapuskasing	at Kapuskasing	2,820	O'Brien	"
Mattagami	at Smooth Rock Falls	3,970	Kendry	"
Mississagi	at Iron Bridge	3.565	Gladstone	Algoma
South	near Powassan	294	Himsworth	Parry Sound
Spanish	near Webbwood	4,340	Hallam	Sudbury
Sturgeon	near Smoky Falls	2,570	Field	Nipissing
Vermilion	near Whitefish	1,580	Graham	Sudbury

aux Sables River at Massey

Location—About 800 feet upstream from C. P. Ry. bridge and ¼ mile northeast of railway station, in the Village of Massey, Township of Salter, Sudbury District.

Records Available—Discharge measurements from August, 1914. Daily gauge heights from June 10, 1915.

Drainage Area—524 square miles.

Gauge—A chain gauge has been established here reading zero with water at an elevation of 15.94 referred to a B.M. elevation 29.76 painted on top of rock on left bank at entrance to rapids. The gauge is located twenty feet below the section.

Channel and Control—Straight for 1,000 feet above and 100 feet below the gauging station to a rapid. Both banks are high, rocky, wooded, and are not liable to overflow. The bed of the stream is composed of clay and gravel, practically permanent. The velocity is moderate, and one channel exists at all stages.

Discharge Measurements—Made by wading during low water periods. At high stages measurements are made from boat with a Price current meter.

Regulation—The operation of logging dams above cause fluctuations in gauge heights during the log-driving season.

Observer—Jas. Blight, Massey.

Discharge Measurements of aux Sables River at Massey in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Nov. 13....	Roberts, E.	78	154	1.83	17.50	281	.....
Dec. 12....	Loy, R	79	154	1.72	17.92	265(a)	.....
1918							
Jan. 14....	"	67	82	2.29	15.03	189	.....
Feb. 13....	Taylor, J. R.....	65	85	2.04	13.37	173	.....
April 19....	"	99	784	1.78	23.36	1,397	.....
Aug. 28....	Loy, R.....	70	77	2.24	16.44	173	.....

(a) Ice measurement.

Daily Gauge Height in feet and Discharge in second-feet of aux Sables River at Massey for 1917-8

Drainage Area, 524 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	16.27	210	18.03	362	17.12	205	.....	....	.....	....	.....	....	20.36	765	24.27	1660	24.81	1800	24.61	1750	22.02	1110	16.44	174
2	16.87	210	17.99	356	17.20	213	.....	....	.....	....	.....	....	21.19	935	23.36	1420	25.23	1920	24.81	1800	20.19	735	16.44	174
3	16.87	210	17.91	344	17.20	213	.....	....	.....	....	.....	....	22.19	1150	23.15	1370	25.23	1920	25.15	1900	19.77	655	16.44	174
4	16.87	210	17.83	332	17.29	223	.....	....	.....	....	.....	....	23.19	1380	22.61	1240	24.77	1790	25.36	1960	17.11	237	16.44	174
5	16.78	201	17.78	325	17.29	323	.....	....	.....	....	.....	....	24.19	1640	21.77	1050	24.19	1640	24.69	1770	17.11	237	16.44	174
6	16.78	201	17.70	313	17.29	212	.....	....	.....	....	.....	....	24.69	1770	21.52	1000	24.65	1760	23.94	1570	17.06	231	16.44	174
7	16.70	194	17.62	302	17.54	229	.....	....	.....	....	.....	....	25.44	1980	22.27	1160	25.44	1980	22.23	1150	16.86	209	16.44	174
8	16.70	194	17.58	296	17.99	271	.....	....	.....	....	.....	....	25.31	1940	23.02	1340	25.44	1980	21.56	1010	17.02	226	16.44	174
9	16.70	194	17.49	284	18.29	312	.....	....	.....	....	.....	....	24.94	1840	26.36	2240	25.44	1980	21.44	985	17.02	226	16.44	174
10	16.70	194	17.41	273	18.29	312	.....	....	.....	....	.....	....	24.74	1780	27.36	2520	25.61	2030	21.44	985	17.02	226	16.44	174
11	16.70	194	17.37	268	18.20	299	.....	....	.....	....	.....	....	24.65	1760	26.27	2210	25.36	1960	21.69	1040	17.02	226	17.02	226
12	16.70	194	17.37	268	18.12	265	.....	....	.....	....	.....	....	24.52	1730	24.19	1640	25.02	1860	21.69	1040	17.02	226	16.94	217
13	16.70	194	17.37	268	18.04	277	.....	....	.....	....	.....	....	24.31	1670	24.11	1620	23.86	1550	21.94	1090	17.02	226	18.02	361
14	16.70	194	17.29	259	17.95	266	.....	....	.....	....	.....	....	24.06	1610	24.11	1620	23.65	1500	22.02	1110	17.02	226	18.02	361
15	16.70	194	17.24	253	17.87	256	.....	....	.....	....	.....	....	24.19	1640	24.23	1650	23.02	1340	22.27	1160	17.02	226	17.94	349
16	16.70	194	17.20	248	17.74	241	.....	....	.....	....	.....	....	24.23	1650	25.44	1980	22.94	1320	22.11	1130	17.02	226	17.94	349
17	16.45	174	17.20	248	17.66	231	.....	....	.....	....	.....	....	24.15	1630	26.11	2170	22.94	1320	21.94	1090	20.11	720	17.94	349
18	16.45	174	17.20	248	17.45	208	.....	....	.....	....	.....	....	23.86	1550	24.61	1750	22.73	1270	22.11	1130	16.98	272	17.77	324
19	16.53	180	17.20	236	17.41	204	.....	....	.....	....	.....	....	23.75	1520	24.02	1600	22.69	1260	22.27	1160	16.77	200	17.69	312
20	16.66	191	17.20	236	17.29	193	.....	....	.....	....	.....	....	23.56	1480	23.15	1370	22.69	1260	17.52	288	16.77	200	17.69	312
21	16.91	214	17.16	231	17.24	189	.....	....	.....	....	.....	....	23.56	1480	21.77	1050	22.69	1260	23.52	1470	16.73	197	17.52	288
22	17.28	258	17.12	226	17.04	174	.....	....	.....	....	.....	....	23.44	1440	22.27	1160	22.40	1190	23.19	1380	16.65	190	17.36	267
23	17.58	296	17.12	226	17.04	174	.....	....	.....	....	.....	....	23.31	1410	23.27	1400	21.90	1080	23.94	1570	16.48	177	17.27	256
24	17.66	307	17.12	215	16.99	170	.....	....	.....	....	.....	....	23.27	1400	23.36	1420	22.36	1180	23.19	1380	16.44	174	17.27	256
25	17.83	332	17.12	215	16.95	168	.....	....	.....	....	.....	....	21.06	905	24.11	1620	22.52	1220	23.11	1360	16.44	174	17.19	247
26	17.99	356	17.12	215	16.95	168	.....	....	.....	....	.....	....	21.11	915	24.27	1660	22.94	1320	22.94	1320	16.44	174	17.19	247
27	18.24	394	17.12	215	16.83	161	.....	....	.....	....	.....	....	20.94	880	25.27	1930	23.11	1360	22.52	1220	16.44	174	17.11	237
28	18.28	401	17.16	220	16.64	151	.....	....	.....	....	.....	....	19.61	625	25.23	1920	23.44	1440	17.11	237	16.44	174	17.02	226
29	18.20	388	17.16	220	16.58	148	.....	....	.....	....	.....	....	24.23	1650	25.23	1920	23.69	1510	23.44	1440	16.44	174	17.02	226
30	18.20	388	17.87	268	16.37	140	.....	....	.....	....	.....	....	25.11	1890	24.86	1822	24.31	1670	23.44	1440	16.44	174	16.94	217
31	18.16	382	.....	.....	*	....	.....	....	.....	....	.....	....	.....	....	25.23	1920	.....	....	23.44	1440	16.44	174	.....	.....

* Below gauge.

Monthly Discharge of aux Sables River at Massey for year ending Sept. 30th, 1918

Drainage Area, 524 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	401	174	246	.77	.33	.47	.54
November "	362	215	266	.69	.41	.51	.57
December "	312	140	217	.60	.27	.41	.47
January .. (1918)	.....	.....	.....	.....	.....	.....	.....
February.	.....	.....	.....	.....	.....	.....	.....
March.....	.....	.....	.....	.....	.....	.....	.....
April	1,980	625	1,467	3.78	1.19	2.80	3.12
May.....	2,520	1,000	1,627	4.81	1.91	3.10	3.57
June.....	2,030	1,080	1,556	3.87	2.06	2.97	3.31
July.....	1,960	237	1,270	3.74	.45	2.42	2.79
August	1,110	174	282	2.12	.33	.54	.62
September	361	174	246	.69	.33	.47	.52
The year	2,520	140	797	4.81	.27	1.52	15.56

Blanche River near Englehart

Location—At the highway bridge near the High Falls, 3½ miles north-west of the Town of Englehart, north half of lot 12, concession 3, Township of Evanturel, Temiskaming District.

Records Available—Discharge measurements from August, 1914. Gauge heights from October 8, 1914, with occasional omissions.

Drainage Area—430 square miles.

Gauge—Vertical steel staff 0-12 feet, located on the southeast downstream side of first pier. The zero of the gauge (elev. 8.00) is referred to B.M. elev. 23.39, painted on a conspicuous rock on the right bank 75 feet below the bridge.

Channel—At a point 200 feet above the station, the river curves from the right and then flows straight, up to a point 700 feet below the station. Both banks are high, rocky, wooded, and will not overflow. The bed of the stream is composed of clay, practically permanent. The current is very slow, flowing through 2 channels at low stages and 3 channels during high water periods.

Discharge Measurements—Made from the highway bridge with a Price current meter.

Winter Flow—During the winter months measurements are made through the ice to determine the winter discharge. The relation of gauge height to discharge is seriously affected by ice.

Regulation—A temporary dam is built above the station during the summer months. This dam is used for storing water during the period when the river is used for log driving. The gauge heights at the section are, therefore, affected during the log driving periods.

Accuracy—Rating curve fairly well defined between gauge heights 10.50 feet and 12.00 feet.

Observer—W. D. Groom, Englehart.

Discharge Measurements of Blanche River near Englehart in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 25....	Roberts, E.....	101	781	.47	11.79	366	.....
Nov. 21....	"	30	63	2.00	9.83	127 (a)	.....
Dec. 6....	Loy, R.....	58	304	.....	9.92	143 (a)	.....
1918							
April 25....	Taylor, J. R....	126	1,031	1.58	14.26	1,624 (b)	.....
May 16....	"	116	1,006	1.31	14.03	1,319 (b)	... ...
June 29....	"	112	726	.55	11.74	397 (b)	.....
Aug. 2....	"	97	645	.38	11.00	246 (b)	....
" 27....	"	92	613	.30	10.73	186 (b)	.....
Sept 26....	"	114	911	1.01	13.35	924 (b)	.....

(a) Ice measurement.
(b) Log jam above section.

Daily Gauge Height in feet and Discharge in second-feet of Blanche River near Englehart for 1917-8

Drainage Area, 430 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	10.58	294	11.75	505	10 00	163	9.92	123	9.75	109	.....	.....	11.00	359	14.58	1980	12.00	565	14.08	1550	11.04	366	10.54	289
2	11.25	403	11.75	505	10.16	177	10.00	129	.....	.....	9.92	123	.....	....	.....	....	12.00	565	14.54	1940	.....	....	10.71	302
3	11.25	403	11.75	505	10.33	188	10.00	129	9.42	83	.....	.....	11.67	486	14.42	1840	12.75	800	14.58	1980	11.00	359	.....	....
4	11.25	403	11.50	450	10.16	173	.....	.....	9.42	83	.....	.....	11.58	467	14.42	1840	13.04	915	14.17	1620	10.83	331	11.50	450
5	11.25	403	11.42	434	.....	.....	10.16	142	.....	.....	.....	.....	11.67	486	13.92	1440	13.42	1110	14.00	1500	10.92	345	.....	....
6	.....	.....	.....	.....	10.08	157	.....	.....	9.33	75	9.83	115	12.04	575	.....	....	13.25	1010	13.42	1110	.....	....	11.29	410
7	10.83	331	11.50	450	.....	.....	10.16	142	9.25	69	9.83	115	12.33	660	14.08	1550	13.33	1060	13.00	900	11.04	366	11.29	410
8	11.08	373	11.33	417	10.17	165	.....	....	.....	.....	.....	.....	12.67	770	14.64	2040	13.17	975	12.83	830	11.08	373	11.17	389
9	11.00	359	10.42	273	.....	.....	10.37	160	9.92	123	9.75	109	12.33	660	14.75	2150	12.92	865	12.75	800	.....	....	.....	....
10	10.92	345	10.42	273	10.16	159	.....	....	.....	.....	.....	.....	12.58	736	16.08	3480	12.81	820	12.75	800	11.04	366	12.75	800
11	10.75	318	.....	.....	10.00	145	10.00	129	9.83	115	9.83	115	.....	....	15.58	2980	12.67	770	12.75	800	11.00	359	12.42	685
12	.....	.....	.....	.....	10.00	145	10.00	129	.....	.....	.....	.....	12.75	800	15.80	3200	12.67	770	12.17	610	10.83	331	12.79	815
13	10.58	294	.....	.....	.....	.....	.....	.....	9.75	109	9.75	109	13.25	1010	15.21	2610	12.75	800	11.92	545	.....	....	14.17	1620
14	11.33	417	.....	.....	10.00	141	9.92	123	9.75	109	9.75	109	13.75	1320	14.42	1840	12.58	735	.....	....	10.92	345	13.92	1440
15	.....	.....	.....	.....	.....	.....	9.92	123	.....	.....	.....	.....	14.42	1840	14.25	1690	12.17	610	11.67	486	10.92	345	13.67	1260
16	11.33	417	.....	.....	9.67	115	10.08	135	9.75	109	9.75	109	15.17	2570	14.08	1550	12.08	585	11.58	467	10.92	345	13.54	1180
17	11.33	417	9.83	203	.....	.....	10.08	135	.....	.....	.....	.....	15.75	3150	13.83	1370	12.00	565	11.50	450	10.83	331	13.33	1060
18	11.33	417	9.75	186	9.75	117	.....	.....	9.75	109	9.83	115	15.79	3190	.....	....	11.83	520	11.42	430	10.83	331	.....	....
19	11.67	486	9.75	186	10.00	137	9.92	123	.....	.....	.....	.....	15.33	2730	14.25	1690	11.71	495	11.17	389	10.67	307	12.50	710
20	11.75	505	10.33	237	.....	.....	.....	.....	9.67	103	10.17	143	14.92	2320	14.94	2340	11.25	403	11.00	359	10.71	312	13.08	930
21	11.92	545	9.83	175	10.16	150	9.92	123	.....	.....	.....	.....	.....	....	.....	....	11.50	450	10.92	345	10.75	318	13.17	975
22	11.92	545	9.83	170	.....	.....	.....	.....	9.92	123	10.58	179	14.67	2070	14.83	2230	11.17	389	10.83	331	10.75	318	13.21	995
23	11.92	545	9.83	116	10.08	139	9.92	123	.....	.....	.....	.....	14.58	1980	14.52	1930	11.58	467	10.83	331	10.67	307	13.25	1010
24	.....	.....	9.83	166	.....	.....	9.92	123	9.92	123	12.08	294	14.42	1840	14.12	1580	11.50	450	10.83	331	10.67	307	13.04	915
25	11.92	545	9.83	161	10.00	133	.....	.....	.....	.....	.....	.....	14.25	1690	13.94	1450	10.75	318	10.67	307	10.54	289	13.00	900
26	.....	.....	.....	.....	.....	.....	9.92	123	.....	.....	11.50	251	14.17	1620	.....	....	10.71	312	11.08	373	.....	....	13.25	1010
27	11.67	486	9.83	157	10.08	139	.....	.....	.....	.....	11.25	251	14.00	1500	12.92	865	10.79	324	.....	....	10.67	307	13.33	1060
28	11.83	520	.....	.....	.....	.....	9.75	109	9.67	103	.....	.....	14.00	1500	12.83	830	11.08	373	11.00	359	10.67	307	.....	....
29	11.58	467	10.16	182	9.92	123	.....	.....	.....	.....	10.92	260	14.42	1840	.....	....	11.83	520	11.08	373	10.75	318	13.46	1130
30	11.75	505	10.00	168	9.92	123	9.75	109	.....	.....	10.83	331	14.75	2150	12.17	610	.....	....	11.08	373	10.75	318	13.33	1060
31	11.75	505	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	11.17	389	.....	....	11.08	373	10.75	318	.....	....

Monthly Discharge of Blanche River near Englehart for year ending Sept. 30, 1918

Drainage Area, 430 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October...(1917)	545	294	433	1.27	.68	1.01	1.16
November "	505	157	284	1.17	.37	.66	.74
December "	188	115	147	.44	.27	.34	.39
January .. (1918)	160	109	128	.37	.25	.30	.35
February	123	69	103	.29	.16	.24	.25
March.....	331	109	170	.77	.25	.40	.46
April	3,190	359	1,493	7.42	.83	3.47	3.87
May.....	3,480	389	1,819	8.09	.90	4.23	4.88
June.....	1,110	312	639	2.58	.73	1.48	1.65
July.....	1,980	307	726	4.60	.71	1.69	1.95
August.....	373	289	332	.87	.67	.77	.89
September	1,620	289	880	3.77	.67	2.05	2.29
The year	3,480	69	596	8.09	.16	1.39	18.88

Frederickhouse River at Frederickhouse

Location—On the upstream side of the highway bridge crossing the river on the township line between the Townships of Fournier and Clute, District of Temiskaming.

Records Available—Discharge measurements and daily gauge heights from July, 1915, to September 30, 1917, were taken at the railway crossing 1.8 miles north and downstream from the present point of observation and measurement.

Drainage Area—1,260 square miles.

Gauge—Standard enamelled gauge plates 0-12 feet on the upstream side of the first pier from the left bank. Zero of the gauge is at an assumed elevation of 98.00 feet referred to a B.M. elev. 115.18, the top of an iron cap projecting above the floor of the bridge west of the west pier.

Channel and Control—The current is slow, but even across the section, and through one channel, away from the bridge, where discharge measurements are made when possible. Otherwise measurements are made from the bridge that breaks the flow into several channels.

Discharge Measurements—Made by current meter from the bridge, ice, or boat.

Regulation—There is no artificial control of the waters of this river above the new section.

Accuracy—Logging operations have hampered metering during past year, and will more so in future.

Observer—Allard Bourassa, Frederickhouse.

Discharge Measurements of Frederickhouse River at Frederickhouse in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 23....	Roberts, E.....	148	1,136	1.12	101.65	1,316	.....
Dec. 5....	Loy, R	138	1,001	1.03	101.50	1,029(a)	.....
1918							
Feb. 8....	Taylor, J. R.....	100	774	.47	99.91	364(a)	.....
Mar. 20....	"	100	720	.42	99.49	303(a)	.....
April 26....	"	152	1,489	1.82	103.80	2,716(b)	.....
May 15....	"	123	1,931	2.90	106.73	5,590(b)	.....
June 26....	"	151	1,425	1.47	103.28	209(b)	.....
Aug. 1....	"	151	1,160	.89	101.48	1,035	.....
" 28....	"	132	1,003	.36	99.71	365	.....

(a) Ice measurement.
(b) Log jam above section.

Daily Gauge Height in feet and Discharge in second-feet of Frederickhouse River at Frederickhouse for 1917-8

Drainage Area, 1,260 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	100.93	780	.....	.....	101.83	1140	100.50	525	99.92	364	.....	.....	100.75	610	105.75	4510	106.50	5520	103.83	2620	101.33	965	100.17	500
2	100.93	780	.....	.....	101.67	1060	100.50	525	99.92	364	.....	.....	100.75	610	105.83	4590	106.42	5240	105.42	4160	101.00	810	100.17	500
3	100.93	780	.....	.....	101.67	1060	100.33	474	99.93	346	.....	.....	100.75	610	105.50	4240	106.33	5140	105.50	4240	100.58	640	101.58	1090
4	100.93	780	.....	.....	101.50	950	100.25	450	99.83	346	.....	.....	100.75	610	105.33	4070	105.83	4590	106.67	5510	100.42	580	102.42	1580
5	100.74	700	.....	.....	101.50	950	100.17	426	99.83	346	.....	.....	100.42	500	105.33	4070	105.67	4420	106.75	5600	100.33	550	102.17	1420
6	100.74	700	.....	.....	101.33	870	100.17	426	99.75	330	.....	.....	100.25	450	105.33	4070	105.58	4330	104.67	3400	100.00	450	101.75	1180
7	100.74	700	.....	.....	101.25	830	100.17	426	99.83	346	.....	.....	99.92	364	106.25	5050	105.58	4330	104.42	3150	99.92	426	101.33	965
8	100.74	700	.....	.....	101.17	795	100.17	426	99.92	364	.....	.....	100.08	402	107.42	6340	105.58	4330	104.17	2920	99.75	382	101.17	885
9	100.93	780	.....	.....	101.17	795	100.17	426	99.92	364	.....	.....	100.17	426	107.33	6240	105.50	4240	104.00	2760	99.50	330	101.00	810
10	100.93	780	.....	.....	101.00	725	100.17	426	100.00	382	.....	.....	100.25	450	107.25	6150	105.42	4160	104.00	2760	99.33	296	101.83	1230
11	100.93	780	.....	.....	100.92	715	100.17	426	100.00	382	.....	.....	100.33	474	107.33	6240	105.33	4070	103.75	2560	99.25	282	101.33	965
12	100.93	780	.....	.....	100.50	525	100.17	426	100.00	382	.....	.....	100.67	580	107.58	6510	105.67	4420	103.67	2490	99.33	296	102.08	1370
13	100.93	780	.....	.....	100.50	525	100.25	450	99.92	364	.....	.....	100.25	525	107.67	6610	105.67	4420	103.50	2360	99.42	314	101.92	1280
14	100.93	780	.....	.....	101.58	965	100.25	450	99.92	364	.....	.....	101.83	1230	107.75	6700	105.33	4070	103.42	2290	99.33	296	101.83	1230
15	101.30	950	.....	.....	101.00	705	100.33	474	99.83	346	.....	.....	102.58	1680	107.50	6420	105.25	3980	103.33	2220	99.17	270	101.67	1140
16	101.64	1120	.....	.....	100.67	589	100.33	474	99.83	346	.....	.....	103.00	1980	107.00	5880	105.00	3720	103.17	2100	99.33	296	102.08	1370
17	101.64	1120	.....	.....	100.67	580	100.33	474	99.83	346	.....	.....	103.00	1980	107.25	6150	104.67	3400	103.08	2040	99.58	346	102.33	1520
18	101.95	1290	.....	.....	100.75	610	100.42	500	99.75	330	.....	.....	103.00	1980	107.50	6420	104.42	3150	103.08	2040	99.83	402	102.50	1630
19	102.55	1660	.....	.....	100.67	580	100.42	500	99.42	270	.....	.....	103.00	1980	107.83	6790	104.33	3070	102.75	1800	99.75	382	102.75	1800
20	102.81	1840	.....	.....	100.67	580	100.33	474	99.08	228	99.49	303	103.00	1980	108.50	7520	104.25	2990	102.67	1740	99.58	346	102.42	1580
21	102.81	1840	.....	.....	100.50	525	100.33	474	98.67	196	.....	.....	103.08	2040	108.33	7340	104.00	2760	102.58	1680	99.67	364	102.50	1630
22	102.68	1750	100.50	575	100.67	580	100.42	500	98.42	185	99.83	346	103.33	2220	108.51	7540	103.83	2620	102.50	1630	99.67	364	103.50	2360
23	102.55	1660	100.50	575	100.67	580	100.33	474	98.17	178	99.92	364	103.42	2290	108.67	7710	103.67	2490	102.67	1740	99.67	364	103.42	2290
24	102.10	1380	100.83	695	100.67	580	100.25	450	98.00	172	100.08	402	103.50	2360	107.58	6510	103.50	2360	102.67	1740	99.58	346	103.25	2160
25	102.10	1380	100.92	735	100.67	580	100.25	450	98.00	172	100.25	450	103.58	2420	107.25	6150	103.33	2220	102.67	1740	99.58	346	103.42	2290
26	102.10	1380	101.33	915	100.67	580	100.25	450	.....	....	100.17	426	103.92	2690	107.00	5880	103.33	2220	103.00	1980	99.83	402	103.42	2290
27	102.10	1380	101.58	1040	100.67	580	100.17	426	.....	....	100.25	450	104.25	2990	106.83	5690	103.50	2360	102.75	1800	99.83	402	103.58	2420
28	102.11	1390	101.58	1020	100.58	550	100.17	426	.....	....	100.25	450	104.75	3480	106.92	5790	103.75	2560	102.58	1680	99.75	382	103.58	2420
29	102.11	1390	101.67	1060	100.50	525	100.08	402	.....	....	100.50	525	105.08	3800	106.75	5600	103.58	2420	102.25	1470	100.00	450	103.50	2360
30	102.11	1390	101.75	1100	100.50	525	100.00	382	.....	....	100.75	610	105.83	4590	106.58	5410	103.33	2220	102.08	1370	100.17	500	103.67	2490
31	101.95	1290	.....	.....	100.50	525	100.00	382	.....	....	100.92	675	.....	....	106.42	5240	.....	....	101.67	1140	100.17	500	.....	....

Monthly Discharge of Frederickhouse River at Frederickhouse (Highway Bridge) for year ending Sept. 30th, 1918

Drainage Area, 1,260 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	1,840	700	1,123	1.46	.56	.89	1.03
November "	1,060	575	857	.84	.46	.68	.76
December "	1,140	525	699	.90	.42	.55	.63
January .. (1918)	525	382	451	.42	.30	.36	.42
February	382	172	313	.30	.14	.25	.26
March	675	303	455	.54	.24	.36	.42
April	4,590	364	1,610	3.64	.29	1.28	1.43
May	7,710	4,070	5,917	6.12	3.23	4.70	5.42
June	5,320	2,220	3,587	4.22	1.76	2.85	3.18
July	5,600	1,140	2,475	4.44	.90	1.96	2.26
August	965	270	422	.77	.21	.33	.38
September	2,490	500	1,558	1.98	.40	1.24	1.38
The year	7,710	172	1,624	6.12	.14	1.29	17.50

Kapuskasing River at Kapuskasing

Location—About 500 feet downstream from the C. G. Railway's bridge, and 300 feet upstream from the C. G. Co.'s pump-house in the Village of Kapuskasing.

Records Available—Discharge measurement from March 23rd, 1918, gauge heights from May 10th, 1918.

Drainage Area—2,820 square miles.

Gauge—A chain gauge consisting of weight held by chain, and three plates of H.E.P.C. standard gauge, has been installed. The gauge is located 75 feet upstream from the section. The initial point for soundings is a track spike driven in a 16-inch cedar tree on the north bank.

Channel and Control—The channel is straight for 300 feet above and below the section. A small island exists at low water 75 feet below the section. The banks are high, rocky, slightly wooded, and are not liable to overflow. The bed of the river consists of clean rock and is permanent.

Discharge Measurements—Made from a boat with a small Price current meter.

Winter Flow—The rating curve is affected by ice and measurements are taken to determine the flow.

Observer—J. Ferguson, Kapuskasing, Ontario.

Discharge Measurements of Kapuskasing River at Kapuskasing in 1918

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Mar. 23....	Taylor, J. R....	100	657	.68	674.97	448	.....
" 24....	"	28	191	4.35	674.91	442	.....
May 8....	"	324	4,103	3.06	683.93	12,634	.....
" 9....	"	339	4,920	2.78	684.03	13,725	.....
July 29....	"	310	2,116	1.33	677.71	2,809	.....
Sept. 25....	"	311	2,300	1.42	678.30	3,283	.....

Daily Gauge Height in feet and Discharge in second-feet of Kapuskasing River at Kapuskasing for 1918

Drainage Area, 2,820 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	680.75	6620	682.32	9310	677.11	2030	675.32	630
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	680.86	6780	684.67	14160	676.94	1860	675.30	620
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	680.83	6740	684.59	13990	676.82	1740	675.32	630
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	680.77	6640	684.17	13110	676.73	1660	675.45	695
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	680.67	6500	683.77	12270	676.65	1580	675.64	805
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	680.96	6940	683.32	11320	676.55	1500	675.86	950
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	680.35	6020	682.78	10210	676.44	1400	676.07	1100
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	680.25	5880	682.22	9120	676.36	1330	676.08	1110
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	680.37	6050	681.74	8220	676.30	1280	676.07	1100
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	684.17	13110	680.30	5950	681.32	7510	676.19	1190	676.10	1120
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	683.93	12600	680.08	5640	680.97	6950	676.15	1160	676.17	1180
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	683.66	12040	680.34	6010	680.70	6540	676.11	1130	676.27	1260
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	682.76	10170	680.51	6260	680.39	6080	676.97	1100	676.40	1360
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	682.14	8970	680.47	6200	680.09	5660	676.05	1080	676.50	1450
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	681.52	7840	680.32	5980	679.84	5310	675.94	1010	676.54	1490
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	681.18	7290	680.11	5680	679.53	4890	675.86	950	676.56	1500
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	680.97	6950	679.87	5350	679.33	4630	675.77	890	676.61	1550
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	681.62	8010	679.63	5020	679.05	4280	675.68	830	676.78	1700
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	682.41	9480	679.40	4720	678.81	3990	675.64	805	677.09	2010
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	683.96	12670	679.16	4410	678.61	3750	675.63	800	677.75	2720
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	683.79	12310	678.98	4200	678.39	3490	675.65	810	678.13	3180
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	683.74	12200	678.84	4030	678.25	3320	675.53	740	678.30	3380
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	683.33	11340	678.90	4100	678.12	3160	675.48	710	678.38	3480
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	682.93	10510	678.89	4090	678.08	3120	675.57	760	678.30	3380
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	682.16	9000	678.95	4160	678.00	3020	675.49	715	678.13	3180
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	681.70	8150	679.19	4450	677.92	2920	675.40	670	678.03	3060
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	681.49	7790	679.41	4730	677.86	2850	675.35	645	677.90	2900
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	681.34	9540	681.25	7400	677.76	2730	.....	630	677.98	3000
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	681.12	7190	681.76	8260	677.54	2480	675.30	620	677.82	2800
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	680.97	6950	681.42	7670	677.41	2340	675.30	620	677.76	2730
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	680.83	6740	.....	.....	677.28	2200	675.31	625	.....	.....

Monthly Discharge of Kapuskasing River at Kapuskasing for period ending Sept. 30th, 1918

Drainage Area, 2820 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October ..(1917).	.....	.....	.....	.....	.....	.....	.....
November "	.....	.....	.....	.....	.....	.....	.....
December "	.....	.....	.....	.....	.....	.....	.....
January ..(1918).	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May.....	13,110	6,740	9,493	4.65	2.39	3.37	3.89
June	8,260	4,030	5,749	2.93	1.43	2.04	2.28
July.....	14,160	2,200	6,224	5.02	.78	2.21	2.55
August	2,030	620	1,060	.72	.22	.38	.44
September.....	3,480	620	1,869	1.23	.22	.66	.74
The period.....	14,160	620	4.879	5.02	.22	1.73	9.84

Mattagami River at Smooth Rock Falls

Location—Lot 23, concession XI, Township of Kendry, Temiskaming District. About one mile below the plant of the Mattagami Pulp and Paper Co. at Smooth Rock Falls.

Records Available—The Mattagami Pulp and Paper Co. take readings of the water below their plant, from which it is expected estimates of flow may be made when a curve is defined.

Drainage Area—3,970 square miles.

Gauge—A chain gauge is installed reading zero with the elevation of the water at 707.00, referred to a B.M. elev. 725.04. The B.M. is 10 feet S.W of the initial point for soundings the head of a nail driven in a blazed and painted tree.

Channel and Control—A well-defined, evenly distributed current exists at all times. There is but one channel at all stages. Extreme high water is not likely to go over the river banks at this spot. The control point is not well defined, or as yet has not been ascertained.

Regulation—Extensive storage works have been constructed for the purposes of regulating the headwaters of the river for the benefit of power plants.

Discharge Measurements—Made by current meter from a boat or the ice.

Winter Flow—The amount of ice effect on discharge is not yet determined, but will be considerable.

Discharge Measurements of Mettagami River at Smooth Rock Falls in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Dec. 3....	Loy, Robt	400	3,606	.84	709.33	3,016 (a)	.....
1918							
Feb. 9....	Taylor, J. R....	393	3,127	.46	709.60	1,454 (a)	.....
Mar. 21....	"	401	3,514	.47	710.45	1,643 (a)	.....
April 30....	"	415	5,928	1.94	715.29	11,499	.....
May 13....	"	425	6,448	2.22	716.55	14,324	.....
June 27....	"	410	4,598	1.35	712.15	6,217	.....
July 31....	"	400	3,717	.80	709.90	2,989	.....
Aug. 29....	"	404	3,654	.76	709.85	2,775	.....
Sept. 26....	"	413	4,815	1.39	712.64	6,691	.....

(a) Ice measurement.

Mississagi River at Iron Bridge

Location—At highway bridge in the village of Iron Bridge, south half of lot 3, concession 2, Township of Gladstone, District of Algoma.

Records Available—Discharge measurements from September, 1915. Daily gauge heights from November 16, 1915.

Drainage Area—3,565 square miles.

Gauge—Vertical steel staff with enamelled face graduated in feet and inches, 0 to 6 foot section placed on pile on left shore 350 feet down stream from bridge, 6 to 12 foot section placed on down stream side of right abutment of bridge. Zero of the gauge (elev. 30.00) referred to bench mark (elev. 55.50 feet) on top of right abutment down stream side.

Channel—Straight for about 300 feet above and about 1 mile below the gauging station. The bed of the stream consists of clay and sand, slightly shifting.

Discharge Measurements—Made from highway bridge with small Price current meter.

Control—About eleven miles below the gauging station there is a small falls and rapids known as the Mississagi rapids. Log jams sometimes occur on these rapids during low water period, which may cause back water at the gauging station.

Winter Flow—During the winter months measurements are made through the ice to determine the winter flow. The relation of gauge height to discharge is seriously affected by ice.

Accuracy—There is a slight back water effect at the west end of the section during low stages.

Observer—Nelson Winnock, Iron Bridge.

Discharge Measurements of Mississagi River at Iron Bridge in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 16....	Roberts, E.	158	2,340	.50	30.75	1,176	.....
Nov. 14....	"	165	2,443	.75	31.35	1,833	.....
Dec. 11....	Loy, R.....	226	2,589	.46	31.67	1,184 (a)	.....
1918							
Jan. 15....	"	225	2,513	.46	32.00	1,144 (a)	.....
Feb. 21....	Taylor, J. R....	226	2,631	.50	32.56	1,311 (a)	.....
April 20....	"	181	3,176	2.11	35.61	6,689	.....
Aug. 27....	Loy, R.....	160	2,427	.64	30.96	1,544	.....

(a) Ice measurement.

Daily Gauge Height in feet and Discharge in second feet of Mississagi River at Iron Bridge for 1917-8

Drainage Area, 3,565 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	30.86	1300	31.58	2090	31.75	1720	32.00	1280	32.12	1030	32.58	1320	33.92	2240	38.08	9500	38.58	10220	34.17	4940	31.92	2460	30.79	1220
2	30.86	1300	31.58	2090	31.75	1670	32.08	1370	32.12	1030	32.62	1360	33.92	2790	37.75	9080	38.25	9740	34.92	5760	31.75	2280	30.83	1260
3	30.90	1340	31.50	2000	31.67	1530	32.10	1400	32.12	1030	32.67	1420	34.12	3010	37.92	9300	38.08	9500	35.17	6040	31.67	2190	30.87	1310
4	30.90	1340	31.50	2000	31.67	1470	32.00	1280	32.12	1030	32.67	1420	34.29	3200	37.50	8760	37.92	9300	35.25	1620	31.58	2090	30.92	1360
5	30.90	1340	31.50	2009	31.58	1320	31.92	1140	32.08	935	32.71	1460	34.17	3290	37.25	8450	38.67	10360	35.33	6210	31.42	1910	31.00	1450
6	30.90	1340	31.42	1910	31.67	1360	31.92	1140	32.08	935	32.71	1460	34.00	3430	36.75	7840	38.92	10730	35.17	6040	31.42	1910	31.08	1540
7	30.90	1340	31.42	1910	31.75	1400	32.00	1230	32.12	975	32.67	1420	33.92	3670	37.00	8140	38.58	10220	35.00	5850	31.42	1910	31.17	1640
8	30.90	1340	31.42	1910	31.75	1400	32.00	1230	32.12	975	32.67	1420	33.83	3900	37.75	9080	38.50	10100	34.75	5580	31.58	2090	31.17	1640
9	30.90	1340	31.42	1910	31.75	1340	32.00	1230	32.12	920	32.67	1420	33.25	3700	38.08	9500	38.08	9500	34.50	5300	31.58	2090	31.17	1640
10	30.90	1340	31.33	1810	31.83	1430	32.00	1180	32.17	975	32.67	1420	33.08	3740	38.92	10730	37.25	8450	34.42	5210	31.58	2090	31.17	1640
11	30.90	1340	31.42	1910	31.83	1370	32.00	1180	32.17	975	32.67	1420	33.08	3740	40.17	12930	37.92	9300	34.17	4940	31.50	2000	31.17	1640
12	30.90	1340	31.42	1910	31.83	1370	31.92	1090	32.21	1020	32.67	1420	33.17	3840	40.25	13100	37.67	8970	34.00	4750	31.42	1910	31.25	1720
13	30.90	1340	31.42	1910	31.83	1370	31.92	1090	32.21	1020	32.67	1420	33.21	3880	40.00	12580	37.58	8860	33.92	4660	31.33	1810	31.33	1810
14	30.88	1320	31.33	1810	31.83	1370	32.00	1180	32.25	1060	32.62	1360	33.50	4200	39.75	12110	37.42	8660	33.75	4480	31.92	2460	31.46	1960
15	30.87	1310	31.42	1910	31.83	1320	32.00	1120	32.25	1010	32.62	1360	34.00	4750	39.33	13380	37.33	8550	33.50	4200	32.33	2910	31.54	2040
16	30.83	1260	31.42	1910	31.92	1320	32.00	1120	32.29	1050	32.62	1360	34.75	5580	39.00	10850	36.92	8050	33.42	4110	32.33	2910	31.62	2130
17	30.83	1260	31.42	1910	31.92	1420	32.00	1120	32.33	1100	32.62	1360	35.17	6040	38.67	10360	36.58	7640	33.33	4010	31.92	2460	31.62	2130
18	30.92	1360	31.42	1910	32.00	1500	32.00	1120	32.42	1200	32.67	1420	35.75	6680	38.33	9850	36.58	7640	33.17	3840	31.67	2190	31.71	2230
19	31.00	1450	31.42	1910	32.00	1450	32.08	1150	32.46	1240	32.67	1420	35.75	6680	38.50	10100	36.50	7540	33.08	3740	31.50	2000	31.79	2320
20	31.08	1540	31.42	1910	31.92	1360	32.08	1150	32.50	1280	32.67	1420	35.58	6490	40.92	14580	36.25	7250	32.92	3560	31.43	1920	31.92	2460
21	31.17	1640	31.42	1910	31.92	1360	32.08	1150	32.54	1270	32.71	1460	35.42	6310	41.00	14770	36.00	6960	32.75	3380	31.17	1640	32.00	2550
22	31.25	1720	31.46	1960	31.92	1360	32.08	1150	32.58	1320	32.75	1500	35.42	6310	40.50	13640	35.33	6210	32.67	3290	31.17	1640	32.12	2680
23	31.33	1810	31.83	2250	31.83	1210	32.08	1100	32.58	1320	32.79	1550	35.58	6490	40.00	12580	35.08	5940	32.58	3190	31.17	1640	32.25	2820
24	31.42	1910	31.83	2200	31.92	1310	32.08	1100	32.58	1320	32.83	1590	35.67	6590	39.50	11670	34.75	5580	32.50	3100	31.08	1540	32.25	2820
25	31.50	2000	32.16	2510	31.92	1310	32.12	1140	32.58	1320	32.83	1590	35.58	6490	39.50	11670	34.42	5210	32.50	3100	31.08	1540	32.21	2780
26	31.58	2090	32.08	2360	31.92	1310	32.17	1200	32.58	1320	32.87	1640	35.42	6310	39.17	11120	34.33	5110	32.42	3010	31.00	1450	32.17	2740
27	31.58	2090	31.92	2130	31.92	1250	32.12	1090	32.58	1320	32.92	1690	35.17	6040	39.67	11970	34.25	5020	32.42	3010	30.96	1410	32.08	2640
28	31.67	2190	31.92	2080	32.00	1340	32.12	1090	32.58	1320	32.92	1690	35.08	5940	39.50	11670	34.00	4750	32.33	2910	30.92	1360	32.00	2550
29	31.75	2280	31.75	1840	32.00	1340	32.12	1090	.....	....	33.00	1780	35.46	6360	39.50	11670	33.83	4560	32.25	2820	30.83	1260	32.00	2550
30	31.75	2280	31.75	1780	32.00	1340	32.12	1090	.....	....	33.08	1870	37.00	8140	39.33	11380	33.75	4480	32.17	2740	30.79	1220	32.00	2550
31	31.67	2190	.....	....	32.08	1430	32.12	1090	.....	....	33.17	1970	.....	....	39.08	10980	.....	.....	32.00	2550	30.79	1220	.....	....

Monthly Discharge of Mississagi River at Iron Bridge for year ending Sept. 30th, 1918

Drainage Area, 3,565 Square Miles.

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	2,280	1,260	1,582	.64	.35	.44	.51
November "	2,510	1,780	1,988	.70	.50	.58	.65
December "	1,720	2,210	1,390	.48	.34	.39	.45
January (1918)	1,400	1,090	1,164	.39	.31	.33	.38
February	1,320	920	1,118	.37	.26	.31	.32
March	1,970	1,320	1,497	.55	.37	.42	.48
April	8,140	2,240	4,994	2.28	.63	1.40	1.56
May	14,770	7,840	11,075	4.14	2.19	3.11	3.59
June	10,730	4,480	7,813	3.01	1.26	2.19	2.44
July	6,210	2,550	4,272	1.74	.72	1.20	1.38
August	2,910	1,220	1,920	.82	.34	.54	.62
September	2,820	1,220	2,061	.79	.34	.58	.65
The year	14,770	920	3,416	4.14	.26	.96	13.03

South River near Powassan

Location—75 feet below "Gough's" highway bridge on the Nipissing village road 2.5 miles northwest of Powassan station and at the farm owned by Owen Gough between lots 20 and 21 and 14th and 15th concessions in the Township of Himsworth, in the District of Parry Sound.

Records Available—Discharge measurements from July 6, 1917, and before then at "Healey's" bridge. Daily gauge heights from March 11, 1914.

Drainage Area—294 square miles.

Gauge—Standard enamelled gauge plates 0-12 feet on the northwest corner of the left abutment. Elevation of the zero of the gauge 23.00 feet is referred to a B.M. elevation assumed 56.15 feet painted on the top of a corner of barn foundation 350 feet from the section.

Channel—Straight for about 200 feet above and 150 feet below the metering section. With high water conditions both banks are liable to overflow. The bed is largely composed of soft, black muck, likely to shift under high velocities.

Discharge Measurements—Made with current meter from a boat at a section 100 feet below the bridge.

Winter Flow—Measurements made through ice in the winter. Ordinary relations between gauge heights and discharge are seriously disturbed by ice conditions, and measurements are made in the winter to determine this effect.

Accuracy—A fairly well defined rating curve has been established.

Observer—Owen Gough, Powassan.

Discharge Measurements of South River near Powassan in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 13	Roberts, E.....	77	545	.45	25.23	245	.....
Nov. 7	"	100	654	.60	26.00	392	.....
" 9	"	82	509	.65	25.83	329	.....
Dec. 15	Loy, R.....	81	357	.54	24.75	193 (a)	.....
1918							
Jan. 10	"	70	268	.51	24.58	137 (a)	.....
Feb. 2	Taylor, J. R....	73	290	.35	24.42	101 (a)	.....
Mar. 6	"	81	287	.50	24.74	144 (a)	.....
June 17	"	87	523	.52	25.21	270	.....
July 26	"	83	400	.29	23.95	115	.....
Aug. 16	"	81	406	.25	23.95	112	.....
Sep. 28	"	86	492	.48	25.00	235	.....

(a) Ice measurement.

Daily Gauge in feet Height and Discharge in second feet of South River near Powassan for 1917-8

Drainage Area, 294 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	24.96	221	27.21	725	25.42	298	24.58	149	24.42	106	24.88	162	31.30	1870	27.55	820	27.02	670	24.88	209	23.84	83	24.09	108
2	25.00	227	26.92	645	25.50	313	24.58	149	24.42	101	24.87	161	32.76	2280	27.34	760	26.88	635	25.22	262	23.84	83	24.26	127
3	24.87	208	26.67	580	25.46	305	24.58	142	24.42	100	24.86	159	32.59	2230	27.13	705	26.51	540	25.13	248	23.80	79	24.26	127
4	25.08	240	26.46	525	25.42	298	24.58	142	24.42	100	24.85	158	31.22	1850	26.93	650	25.93	401	24.93	216	23.76	75	24.09	108
5	25.29	274	26.29	483	25.38	281	24.58	142	24.42	100	24.76	146	30.01	1510	26.72	595	25.93	401	24.63	165	23.76	75	24.01	99
6	26.00	416	26.21	463	25.21	253	24.58	142	24.42	100	24.71	144	29.43	1350	26·63	570	25.47	307	24.55	164	23.76	75	24.22	122
7	26.00	416	26.00	416	25.12	238	24.58	142	24.42	100	24.68	136	29.43	1350	26.80	615	25.51	315	24.51	159	23.76	75	24.34	137
8	25.71	355	25.92	398	25.00	220	24.58	142	24.33	91	24.68	136	29.88	1470	27.05	680	25.76	365	24.51	159	23.76	75	24.30	132
9	25.50	313	25.83	379	24.92	208	24.58	142	24.33	91	24.59	125	29.30	1310	27.01	670	25.59	331	24.63	175	24.47	154	24.34	137
10	25.29	274	25.83	379	24.92	208	24.58	137	24.33	91	24.55	120	28.97	1220	27.80	890	25.38	290	25.13	248	24.51	159	24.38	142
11	25.12	246	25.75	363	24.87	201	24.58	136	24.32	90	24.55	120	28.63	1120	28.68	1140	25.29	269	25.05	235	24.30	132	24.38	142
12	25.00	227	25.71	355	24.75	184	24.50	126	24.31	89	24.59	125	28.43	1070	28.09	970	25.22	262	24.97	222	24.34	137	24.38	142
13	25.21	261	25.62	337	24.92	208	24.50	126	24.30	88	24.59	125	28.30	1030	28.68	1140	25.38	290	24.72	187	24.43	149	24.76	192
14	25.62	337	25.50	313	24.83	195	24.50	126	24.29	87	24.59	125	28.34	1040	28.34	1040	25.47	307	24.47	154	24.63	175	25.01	229
15	25.58	329	25.50	313	24.75	184	24.50	126	24.28	86	24.59	125	28.34	1040	27.84	900	25.22	262	24.34	137	24.59	170	24.93	216
16	25.58	329	25.50	313	24.75	184	24.50	126	24.27	85	24.51	116	28.38	1060	27.47	800	25.13	248	24.34	137	24.44	150	25.26	269
17	25.46	305	25.50	313	24.75	184	24.50	126	24.34	92	24.51	116	28.34	1040	27.43	785	25.09	241	24.34	137	24.22	122	25.26	269
18	25.29	274	25.54	321	24.75	184	24.50	120	24.33	91	24.59	125	28.13	985	27.22	730	25.26	269	24.34	137	24.05	141	25.05	235
19	25.58	329	25.58	329	24.83	195	24.50	120	24.32	90	24.68	136	27.76	880	27.13	705	25.05	235	24.30	132	23.93	91	24.76	192
20	26.79	610	25.58	329	24.83	195	24.50	120	24.40	98	25.09	183	27.76	880	27.01	670	24.88	209	24.26	127	23.88	86	24.63	175
21	26.58	555	25.50	313	24.92	208	24.42	111	24.55	114	26.38	290	27.59	830	26.97	660	24.76	192	24.18	118	23.84	83	24.59	170
22	26.21	463	25.42	298	24.92	201	24.50	120	24.46	105	28.51	540	27.88	915	26.80	615	24.97	222	24.09	108	23.97	95	24.51	159
23	25.54	321	25.33	281	24.92	201	24.50	120	24.53	112	28.09	535	27.80	890	26.26	475	25.18	256	24.01	99	23.93	91	24.47	154
24	25.96	407	25.33	281	24.83	188	24.50	120	24.62	111	28.01	605	27.72	870	25.76	365	25.05	235	23.93	91	23.80	79	24.34	137
25	25.67	347	25.25	268	24.92	201	24.42	111	24.51	110	28.18	715	27.34	760	25.30	276	24.97	222	23.93	91	23.72	72	24.01	99
26	25.75	363	25.17	254	24.83	188	24.50	114	24.75	138	27.59	625	27.13	705	25.59	331	24.84	204	23.88	86	23.59	61	24.13	112
27	26.58	555	25.12	246	24.67	167	24.42	106	24.99	170	27.18	635	26.97	660	26.43	520	24.72	187	23.84	83	23.59	61	24.59	170
28	27.17	715	25.17	254	24.67	161	24.42	106	24.90	158	27.05	680	26.84	625	26.97	660	25.18	256	23.84	83	23.59	61	25.01	229
29	27.04	680	25.17	254	24.58	149	24.33	96	.....	....	27.26	740	26.80	625	26.88	635	25.18	256	23.76	75	23.72	72	25.26	269
30	27.29	750	25.17	254	24.67	161	24.42	106	.....	....	28.26	1020	27.38	775	26.63	570	24.88	209	23.76	75	23.76	75	25.55	323
31	27.37	770	.....	....	24.58	149	24.42	106	.....	....	28.93	1210	.....	....	26.68	585	.....	....	23.84	83	23.80	79	.....	.....

Monthly Discharge of South River near Powassan for year ending Sept. 30th, 1918

Drainage Area, 294 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October... (1917)	770	208	391	2.62	.71	1.33	1.53
November. "	725	246	366	2.46	.84	1.24	1.38
December "	313	149	210	1.06	.51	.71	.82
January .. (1918)	149	96	126	.51	.33	.43	.50
February	170	85	103	.58	.29	.35	.36
March	1,210	116	333	4.11	.39	1.13	1.30
April	2,280	625	1,141	7.75	2.12	3.88	4.33
May	1,140	276	694	3.88	.94	2.36	2.72
June	670	187	303	2.28	.64	1.03	1.15
July	262	75	149	.89	.26	.51	.59
August	159	61	99	.54	.21	.34	.39
September	323	99	171	1.10	.34	.58	.65
The year.....	2,280	61	341	7.75	.21	1.16	15.75

Spanish River at Webbwood

Location—On the highway bridge about one and a half miles east of Webbwood station on the Sault Branch of the C.P.R. and eight miles below Espanola Mills.

Records Available—Gauge readings daily from February 1, 1917. Discharge measurements monthly from January, 1917.

Drainage Area—4,340 square miles.

Gauge—Vertical steel staff gauge 0-9 feet on third pier from north abutment and 9-12 feet on fourth pier.

Channel—The approach to the bridge is straight for 300 feet above, and below the bridge for one-half mile.

Discharge Measurements—During the open water season the measurements are made from the bridge and during the winter season the measurements are made from the ice under the bridge.

Winter Flow—The relation between gauge readings and discharge is seriously disturbed during the winter months, but the ice effect is shown to be regular in direction.

Regulation—The Spanish River Pulp and Paper Co., operate a plant a Espanola, eight miles above the section, which is partly shut down on Sundays, accounting for the fluctuation in gauge heights at the week ends. This company also has storage dams at various locations on the headwaters of this river for conserving the flow for both lumber and power purposes.

Accuracy—The curve is based on 15 discharge measurements, the majority being made during the current year.

Observer—D. J. Stewart, Webbwood.

Discharge Measurements of Spanish River at Webbwood in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 17....	Roberts, E.....	162	3,060	.78	37.44	2,395	.....
Nov. 12....	"	213	3,165	.74	37.17	2,339	.....
Dec. 10....	Loy, R.	192	3,042	.73	37.29	2,228 (a)	.....
1918							
Jan. 16....	Loy, R.	177	2,879	.79	37.50	2,271 (a)	.....
Feb. 23....	Taylor, J. R.....	152	2,781	.75	37.75	2,160 (a)	.....
Apr. 21....	" ..	206	3,908	2.20	40.81	8.613	.....
July 7....	" ..	200	3,390	1.16	38.82	3,934	.....

(a) Ice measurement.

Daily Gauge Height in feet and Discharge in second-feet of Spanish River at Webbwood for 1917-8

Drainage Area, 4,340 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	37.83	2650	37.58	2400	37.50	2270	37.25	2000	36.50	1640	37.75	2140	40.25	6470	40.08	6160	40.33	6610	40.67	7230	38.25	3200	37.33	2220
2	37.92	2760	37.42	2280	36.50	1750	37.25	2000	36.33	1600	37.83	2190	41.33	2520	40.50	6920	40.00	6020	40.50	6920	38.42	3450	37.08	2070
3	37.67	2480	37.25	2170	37.25	2110	37.16	1950	36.58	1660	36.92	1740	42.83	11760	40.33	6610	39.83	5720	39.75	5380	38.33	3320	37.33	2220
4	37.58	2400	36.67	1860	37.42	2210	36.92	1840	37.17	1860	37.17	1840	43.00	12150	40.58	7060	39.25	4740	39.50	5160	37.83	2650	37.58	2400
5	37.16	2120	37.50	2340	37.42	2210	37.00	1870	37.17	1860	37.67	2090	43.00	12150	39.17	4610	39.50	5160	39.50	5160	38.00	2860	37.58	2400
6	37.50	2340	37.33	2220	37.33	2100	36.23	1630	37.25	1900	37.83	2190	43.33	12910	39.50	5160	39.25	4740	39.33	4870	38.25	3200	37.75	2560
7	37.83	2650	37.50	2340	37.25	2050	36.50	1690	37.33	1940	38.00	2300	43.00	12150	39.33	4870	39.08	4470	38.75	3940	38.08	2960	37.83	2650
8	37.58	2400	37.58	2400	37.08	1960	36.83	1800	37.33	1940	37.83	2190	43.25	12720	39.33	4870	39.58	5300	39.33	4870	38.33	3320	37.00	2020
9	37.66	2470	37.42	2280	37.00	1920	37.25	2000	37.25	1900	37.67	2090	43.42	13130	39.42	5020	39.33	4870	39.42	5020	38.50	3570	37.17	2120
10	37.58	2400	37.67	2480	37.25	2050	37.42	2090	36.75	1690	36.67	2090	42.75	11580	41.92	9730	39.67	5450	39.50	5160	38.17	3090	37.42	2280
11	37.58	2400	36.67	1860	37.33	2100	37.42	2090	37.33	1910	37.50	2000	42.00	9900	43.17	12540	39.50	5160	39.50	5160	37.83	2650	37.58	2400
12	37.75	2560	37.16	2120	37.33	2100	37.58	2190	37.42	1960	37.67	2090	41.75	9380	.....	.....	39.42	5020	39.42	5020	38.00	2860	37.75	2560
13	37.92	2760	37.25	2170	37.42	2150	36.45	1670	37.50	2000	37.67	2090	41.58	9020	.....	.....	38.75	3940	39.08	4470	38.25	3200	37.67	2480
14	38.00	2860	37.92	2760	37.17	2000	37.50	2140	37.58	2040	37.75	2140	41.17	8200	.....	.....	38.42	3450	39.00	4340	38.08	2960	37.58	2400
15	37.92	2760	37.75	2560	37.17	2000	37.42	2090	37.67	2090	37.83	2190	41.58	9020	.....	.....	38.25	3200	39.58	5300	38.08	2960	37.17	2120
16	37.75	2560	37.42	2280	36.33	1670	37.58	2270	37.83	2190	37.92	2250	41.67	9210	.....	.....	38.17	3090	39.83	5720	38.25	3200	37.67	2480
17	37.33	2220	37.16	2120	37.33	2100	37.42	2090	36.83	1710	36.83	1710	41.58	9020	.....	.....	38.50	3570	39.08	4470	38.25	3200	37.67	2480
18	37.50	2340	36.50	1790	37.33	2100	37.08	1910	37.58	2040	37.33	1910	41.67	9210	.....	.....	38.75	3940	39.33	4870	37.92	2760	37.75	2560
19	37.58	2400	37.25	2170	37.42	2150	37.25	2000	37.58	2040	37.92	2250	41.58	9020	41.17	8200	38.67	3820	39.50	5160	38.00	2860	37.83	2650
20	37.58	2400	37.50	2340	37.42	2150	36.25	1630	37.75	2140	37.83	2190	41.50	8860	41.42	8700	38.83	4070	39.42	5020	38.17	3090	37.75	2560
21	36.83	1940	37.16	2060	37.50	2200	37.00	1870	37.75	2140	37.67	2090	40.75	7380	40.83	7540	39.00	4340	38.58	3690	38.00	2860	37.67	2480
22	37.17	2120	37.16	2060	37.58	2260	36.83	1800	37.75	2150	37.67	2090	41.25	8360	40.58	7060	39.58	5300	38.83	4070	38.08	2960	37.58	2400
23	37.17	2120	36.92	1930	37.33	2100	36.83	1800	37.75	2140	37.75	2140	40.92	7710	40.83	7540	38.50	3570	38.50	3570	38.08	2960	37.58	2400
24	37.50	2340	37.25	2110	37.67	2320	37.08	1910	37.00	1770	37.33	2220	40.67	7230	40.92	7710	39.08	4470	38.08	2960	37.92	2760	37.83	2650
25	37.25	2170	36.50	1750	36.75	1810	36.92	1840	37.75	2140	37.83	2650	40.42	6780	41.17	8200	39.17	4610	38.25	3200	37.75	2560	37.68	2490
26	37.08	2070	37.33	2160	37.58	2260	36.83	1760	37.67	2090	38.25	3200	40.17	6330	40.58	7060	39.17	4610	37.92	2760	37.92	2760	37.75	3560
27	37.92	2760	37.50	2270	37.58	2260	36.17	1580	37.58	2040	38.33	3320	40.00	6020	41.83	9540	39.42	5020	37.83	2650	37.92	2760	37.75	2560
28	37.08	2070	37.42	2210	37.67	2320	36.33	1620	37.67	2090	38.67	3820	39.08	4470	41.00	7860	39.92	5880	37.25	2170	38.00	2860	37.68	2490
29	37.42	2280	37.17	2060	37.67	2250	36.50	1660	.....	.....	39.17	4610	40.08	6160	41.25	8360	40.17	6330	37.75	2560	37.92	2760	37.50	2340
30	37.25	2170	36.92	1930	36.42	1670	36.75	1740	.....	.....	39.50	5160	39.67	5450	40.67	7230	40.33	6610	37.83	2650	37.92	2760	37.75	2560
31	37.50	2340	.....	.....	37.42	2090	36.58	1680	.....	.....	39.33	4870	.....	.....	40.50	6920	.....	.....	38.08	2960	37.75	2560	.....	.....

Monthly Discharge of Spanish River at Webbwood for year ending Sept. 30th, 1918

Drainage Area, 4,340 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	2,860	1,940	2,397	.66	.45	.55	.63
November "	2,760	1,750	2,183	.64	.40	.50	.56
December "	2,320	1,670	2,087	.53	.38	.48	.55
January (1918)	2,270	1,580	1,878	.52	.36	.43	.50
February	2,190	1,600	1,952	.50	.37	.45	.47
March	5,160	1,740	2,511	1.19	.40	.58	.67
April	13,130	4,470	9,009	3.03	1.03	2.08	2.32
May	12,540	4,610	7,311	2.89	1.06	1.68	1.94
June	6,610	3,090	4,769	1.52	.71	1.10	1.23
July	7,230	2,170	4,409	1.67	.50	1.01	1.16
August	3,570	2,560	2,965	.82	.59	.68	.78
September	2,650	2,020	2,419	.61	.47	.56	.62
The year	13,130	1,580	3,658	3.03	.36	.84	11.40

Sturgeon River at Smoky Falls

Location—75 feet upstream from the highway bridge at Smoky Falls Post Office, and two miles above the Smoky Falls, Township of Field, Nipissing District.

Records Available—Discharge measurements from August, 1912. Daily gauge heights, January 12 to 31, 1914, and from March 15, 1914.

Drainage Area—2,570 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, and attached to a wooden pile on the right, upstream side of the bridge. The zero of the gauge (elevation 32.00) is referred to a bench mark (elevation 53.47) painted on a rock on the right bank of the river, about 175 feet above the bridge.

Channel—Straight for about 700 feet above and about 1 mile below the station. The banks are fairly high, clean, sandy and not liable to overflow. The bed of the stream is composed of clay and sand, slightly shifting. The current is fast and smooth.

Discharge Measurements—Made from boat during all stages.

Winter Flow—During the winter months the river is covered with ice, and measurements are made through the ice to determine the winter discharge. The relation of gauge height to discharge is seriously affected by ice.

Regulation—Dams above are used for storage and log driving purposes.

Accuracy—The open water rating curve is fairly well defined. The relation of gauge height to discharge is affected during the log-driving season.

Observer—A. Pineault, Smoky Falls.

Discharge Measurements of Sturgeon River at Smoky Falls in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 19....	Roberts, E.....	193	2,063	.80	33.85	1,599	.....
Nov. 6....	"	193	2,054	.77	33.83	1,574	.....
Dec. 31....	Loy, R.....	212	3,288	.46	34.00	1,516(a)	.....
1918							
Jan. 24....	"	217	3,225	.48	34.17	1,543(a)	.....
" 30....	Roberts, E.....	211	3,247	.47	34.09	1,527(a)	.....
Mar. 26....	Taylor, J. R....	203	3,145	.51	33.98	1,599(a)	.....
June 20....	"	224	3,906	.71	35.68	2,897	.....
July 23....	"	220	3,655	.74	34.57	2,709(b)	.....

(a) Ice measurement.
(b) Boom holding pulpwood across river above section.

Daily Gauge Height in feet and Discharge in second-feet of Sturgeon River at Smoky Falls for 1917-8

Drainage Area 2,570 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	33.83	1900	34.42	2490	33.79	1690	34.08	1540	34.08	1490	33.92	1460	35.46	3400	36.62	5890	35.54	4160	35.37	3890	34.67	2810	33.96	2010
2	33.83	1900	34.25	2300	33.79	1690	34.08	1540	34.00	1450	33.92	1460	36.12	4450	36.58	5830	35.33	3830	35.50	4100	34.67	2810	34.00	2050
3	33.83	1900	34.12	2170	33.75	1640	34.00	1500	34.00	1450	33.92	1460	36.17	4610	36.58	5830	35.21	3640	35.50	4100	34.67	2810	34.08	2130
4	33.83	1900	34.00	2050	33.75	1640	34.00	1500	34.00	1450	33.92	1460	36.00	4420	36.67	5970	35.08	3430	35.67	4370	34.58	2690	33.92	1980
5	33.83	1900	33.92	1980	33.75	1610	34.00	1500	34.00	1450	33.87	1390	35.67	3970	36.37	5490	34.75	2920	35.50	4100	34.50	2590	33.92	1980
6	33.79	1870	33.83	1900	33.75	1610	33.92	1460	34.00	1450	23.83	1370	35.75	4180	36.21	5240	34.62	2750	35.25	3700	34.50	2590	33.92	1980
7	33.75	1840	34.04	2090	33.75	1580	34.00	1500	34.00	1450	33.83	1370	35.83	4390	36.25	5300	34.67	2810	34.79	2980	34.67	2810	33.92	1980
8	33.75	1840	34.17	2220	33.75	1580	34.04	1520	34.00	1450	33.83	1370	35.83	4470	36.58	5830	34.79	2980	34.79	2980	34.54	2640	33.96	2010
9	33.67	1780	34.08	2130	33.83	1600	34.00	1500	34.00	1450	33.83	1370	35.33	3830	36.62	5890	34.71	2860	35.08	3430	34.37	2440	34.00	2050
10	33.62	1740	34.25	2300	33.87	1620	34.04	1520	34.00	1450	33.83	1370	35.37	3890	37.29	6960	34.71	2860	34.96	3240	34.96	3240	34.17	2220
11	33.58	1720	34.04	2090	33.92	1620	34.00	1480	33.92	1410	33.83	1370	35.42	3970	38.54	8960	34.54	2640	34.67	2810	33.79	1870	34.21	2260
12	33.54	1690	33.83	1900	34.00	1670	34.12	1540	33.92	1410	33.83	1370	35.67	4370	38.54	8960	34.67	2810	34.62	2750	33.71	1810	34.33	2390
13	33.67	1780	33.67	1780	34.08	1690	34.17	1560	33.87	1390	33.83	1370	35.58	4230	38.54	8960	35.04	3360	34.54	2640	33.83	1900	34.50	2590
14	33.75	1840	33.58	1720	34.08	1690	34.17	1560	33.87	1390	33.83	1370	35.75	4500	38.50	8900	34.83	3040	34.50	2590	23.83	1900	34.50	2590
15	33.71	1810	33.54	1690	34.08	1660	34.17	1560	33.92	1410	33.75	1340	36.00	4900	38.46	8840	35.04	3360	34.46	2540	33.83	1900	24.58	2690
16	33.62	1740	33.50	1670	34.08	1660	34.17	1560	33.92	1410	33.75	1340	36.46	5640	38.33	8630	34.42	2490	34.46	2540	33.79	1870	34.67	2810
17	33.58	1720	33.50	1670	34.17	1680	34.17	1560	33.92	1410	33.75	1340	36.67	5970	38.29	8560	34.42	2490	34.67	2810	33.67	1780	34.83	3040
18	33.50	1670	33.50	1670	34.33	1790	34.17	1560	33.83	1370	33.75	1340	36.83	6230	38.00	8100	34.33	2390	34.67	2810	33.71	1810	34.83	3040
19	33.79	1870	33.42	1620	34.42	1820	34.17	1560	33.92	1410	33.75	1360	36.87	6290	37.96	8040	34.71	2860	34.50	2590	33.83	1900	34.83	3040
20	34.21	2260	33.42	1620	34.42	1820	34.17	1560	33.92	1410	33.75	1380	36.96	6440	37.75	7700	35.46	4040	34.42	2490	34.17	2220	34.83	3040
21	34.17	2220	33.33	1570	34.37	1740	34.17	1560	33.92	1410	33.75	1400	36.29	5360	37.50	7300	35.29	3760	34.50	2590	34.25	2300	34.71	2860
22	34.17	2220	33.37	1590	34.33	1720	34.17	1560	33.92	1410	33.79	1440	36.29	5360	37.33	7030	35.50	4100	34.50	2590	34.25	2300	34.54	2640
23	34.08	2130	32.79	1300	34.25	1670	34.17	1560	33.92	1410	33.83	1490	36.62	5890	37.21	6840	35.37	3890	34.62	2750	34.04	2090	34.42	2490
24	34.00	2050	32.92	1350	34.25	1670	34.17	1540	33.92	1410	33.92	1560	36.58	5830	36.96	6440	35.46	4040	34.58	2690	33.96	2010	34.46	2540
25	33.92	1980	33.00	1360	34.17	1620	34.17	1560	33.92	1410	33.92	1560	36.54	5760	36.83	6230	35.50	4100	34.33	2390	34.17	2220	34.50	2590
26	33.83	1900	33.12	1410	34.08	1570	34.08	1520	34.00	1450	33.96	1600	36.33	5430	36.62	5890	34.92	3170	34.42	2490	34.25	2300	34.50	2590
27	33.83	1900	33.21	1430	34.08	1570	34.08	1520	34.00	1450	34.00	1640	36.12	5090	36.37	5490	34.46	2540	34.50	2590	34.21	2260	34.42	2490
28	33.83	1900	33.37	1510	34.02	1540	34.08	1520	33.92	1410	33.92	1590	35.96	4840	36.33	5430	34.67	2810	34.04	2090	34.12	2170	34.42	2490
29	33.75	1840	33.58	1600	34.08	1570	34.08	1520	.....	....	34.12	1740	36.04	4960	36.04	4960	35.17	3570	34.00	2050	34.08	2130	.....	2520
30	34.50	2590	33.71	1680	34.00	1520	34.08	1520	.....	....	34.37	1980	36.46	5640	35.83	4630	35.08	3430	34.17	2220	33.79	1870	.....	2520
31	34.67	2810	.....	.....	34.00	1520	34.08	1520	.....	....	34.71	2320	.....	....	35.62	4290	.....	....	34.58	2690	33.87	1940	.....	....

Monthly Discharge of Sturgeon River at Smoky Falls for year ending Sept. 30th, 1918

Drainage Area, 2,570 Square Miles

Month	Discharge in Second-feet.			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area.
October... (1917)	2,810	1,670	1,942	1.09	.65	.76	.88
November "	2,490	1,300	1,795	.97	.51	.70	.78
December "	1,820	1,520	1,647	.71	.59	.64	.74
January .. (1918)	1,560	1,460	1,532	.61	.57	.60	.69
February	1,490	1,370	1,426	.58	.53	.56	.58
March.....	2,320	1,340	1,483	.90	.52	.58	.67
April.....	6,440	3,400	4,944	2.51	1.32	1.92	2.14
May.....	8,960	4,290	6,723	3.49	1.67	2.62	3.02
June	4,160	2,390	3,238	1.62	.93	1.26	1.41
July.....	4,370	2,050	2,923	1.70	.80	1.14	1.31
August.....	3,240	1,780	2,257	1.26	.69	.88	1.01
September.....	3,040	1,980	2,454	1.18	.77	.95	1.06
The year	8,960	1,309	2,703	3.49	.51	1.05	14.28

Vermilion River near Whitefish

Location—At the C.P.R. bridge, two miles east of the Whitefish station, Township of Graham, District of Sudbury.

Records Available—Discharge measurements from August, 1913. Daily gauge heights from June 11, 1915.

Drainage Area—1.580 square miles.

Gauge—Vertical steel staff with enamelled face graduated in feet and inches attached to pile at left abutment of old highway bridge. Zero of the gauge is at an elevation of 25.00 referred to a bench mark elevation 38.39 painted on rock on right bank 15 feet above section.

Channel and Control—Straight for about 300 feet above and 700 feet below the station. Both banks are high, rocky and wooded, and not liable to overflow. Bed of stream is rocky and permanent, current is swift, two channels existing at all stages. At low stages log jams occur at the rapids, causing backwater on the gauge.

Discharge Measurements—Made from the bridge with current meter.

Winter Flow—The relation between the gauge heights and discharge is seriously affected by ice under some conditions.

Accuracy—The relation between gauge heights and discharge have been so seriously disturbed by ice and log conditions during the past year that reliable estimates of flow have not been deemed possible on the information available.

Observer—A. Boucher, Whitefish.

Daily Gauge Height in feet of Vermilion River near Whitefish for 1917-8

Drainage Area, 1,580 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	27.08	.....	27.08	.....	27.50	.....	27.50	.....	26.83	.....	27.42	.....	28.42	.....	28.33	.....	28.75	.....	28.33	.....	28.92	.....	27.92	.....
2	27.08	.....	27.08	.....	27.50	.....	27.50	.....	26.75	.....	27.33	.....	29.67	.....	28.17	.....	28.83	.....	28.50	.....	29.08	.....	27.75	.....
3	27.08	.....	27.00	.....	27.50	.....	27.50	.....	26.75	.....	27.25	.....	29.92	.....	28.00	.....	28.83	.....	28.75	.....	28.50	.....	27.58	.....
4	27.00	.....	27.00	.....	27.50	.....	27.50	.....	26.75	.....	27.25	.....	30.33	.....	27.92	.....	28.92	.....	28.75	.....	28.42	.....	27.33	.....
5	27.00	.....	26.92	.....	27.50	.....	27.50	.....	26.75	.....	27.17	.....	30.50	.....	28.17	.....	29.08	.....	28.75	.....	28.42	.....	27.17	.....
6	27.00	.....	26.92	.....	27.50	.....	27.33	.....	26.75	.....	27.17	.....	30.58	.....	28.42	.....	29.25	.....	28.75	.....	28.33	.....	27.08	.....
7	27.00	.....	26.92	.....	27.50	.....	27.33	.....	26.83	.....	27.08	.....	30.67	.....	28.58	.....	29.33	.....	28.67	.....	28.42	.....	27.17	.....
8	27.00	.....	26.92	.....	27.50	.....	27.33	.....	26.83	.....	27.08	.....	30.75	.....	28.75	.....	29.42	.....	28.58	.....	28.50	.....	27.25	.....
9	27.00	.....	26.92	.....	27.50	.....	27.25	.....	26.83	.....	27.08	.....	30.83	.....	28.92	.....	29.25	.....	28.58	.....	28.67	.....	27.25	.....
10	26.92	.....	26.92	.....	27.50	.....	27.16	.....	26.83	.....	27.08	.....	30.67	.....	29.33	.....	29.08	.....	28.58	.....	28.42	.....	27.25	.....
11	26.92	.....	26.92	.....	27.50	.....	27.08	.....	26.75	.....	27.08	.....	30.50	.....	29.50	.....	28.92	.....	28.58	.....	28.42	.....	27.25	.....
12	26.92	.....	26.92	.....	27.50	.....	27.08	.....	26.75	.....	27.17	.....	30.33	.....	29.42	.....	28.67	.....	28.58	.....	28.33	.....	27.33	.....
13	26.92	.....	26.92	.....	27.50	.....	27.08	.....	26.75	.....	27.17	.....	30.17	.....	29.33	.....	28.08	.....	28.50	.....	28.33	.....	27.42	.....
14	26.92	.....	27.00	.....	27.50	.....	27.08	.....	26.75	.....	27.17	.....	30.08	.....	29.25	.....	27.33	.....	28.42	.....	28.33	.....	27.67	.....
15	26.92	.....	27.00	.....	27.50	.....	27.00	.....	26.75	.....	27.17	.....	30.08	.....	29.25	.....	27.33	.....	28.42	.....	28.33	.....	27.58	.....
16	26.92	.....	27.00	.....	27.50	.....	27.00	.....	26.75	.....	27.33	.....	30.00	.....	29.17	.....	27.58	.....	28.33	.....	28.33	.....	27.58	.....
17	26.92	.....	27.25	.....	27.50	.....	27.00	.....	26.67	.....	27.50	.....	30.00	.....	29.08	.....	27.75	.....	28.25	.....	28.42	.....	27.58	.....
18	26.92	.....	27.25	.....	27.50	.....	27.00	.....	26.67	.....	27.58	.....	29.92	.....	29.58	.....	27.92	.....	28.25	.....	28.42	.....	27.58	.....
19	27.08	.....	27.33	.....	27.58	.....	27.00	.....	26.67	.....	27.58	.....	29.92	.....	29.42	.....	28.60	.....	28.17	.....	28.33	.....	27.58	.....
20	27.25	.....	27.42	.....	27.58	.....	27.00	.....	26.67	.....	27.75	.....	29.92	.....	29.17	.....	28.25	.....	28.33	.....	28.33	.....	27.58	.....
21	27.08	.....	27.50	.....	27.58	.....	27.00	.....	26.67	.....	27.75	.....	29.67	.....	28.92	.....	28.42	.....	28.25	.....	28.33	.....	27.58	.....
22	27.00	.....	27.50	.....	27.58	.....	27.00	.....	26.67	.....	27.83	.....	29.58	.....	28.75	.....	28.33	.....	28.25	.....	28.25	.....	27.58	.....
23	26.92	.....	27.58	.....	27.58	.....	26.92	.....	26.67	.....	27.83	.....	29.33	.....	28.58	.....	28.33	.....	28.33	.....	28.25	.....	27.58	.....
24	26.92	.....	27.58	.....	27.58	.....	26.92	.....	26.92	.....	27.75	.....	29.25	.....	28.50	.....	28.33	.....	28.33	.....	28.25	.....	27.58	.....
25	26.92	.....	27.42	.....	27.58	.....	26.92	.....	27.08	.....	27.78	.....	29.17	.....	28.50	.....	28.25	.....	28.33	.....	28.25	.....	27.58	.....
26	26.83	.....	27.33	.....	27.58	.....	26.92	.....	27.25	.....	27.58	.....	29.08	.....	28.58	.....	28.17	.....	28.33	.....	28.25	.....	27.50	.....
27	26.92	.....	27.16	.....	27.50	.....	26.92	.....	27.33	.....	27.58	.....	28.83	.....	28.58	.....	28.17	.....	28.33	.....	28.17	.....	27.33	.....
28	27.00	.....	27.33	.....	27.50	.....	26.92	.....	27.42	.....	27.67	.....	28.75	.....	28.58	.....	28.17	.....	28.42	.....	28.17	.....	27.25	.....
29	27.00	.....	27.42	.....	27.50	.....	26.83	.....	.....	.....	27.67	.....	28.58	.....	28.67	.....	28.00	.....	28.50	.....	28.08	.....	28.08	.....
30	27.00	.....	27.50	.....	27.50	.....	26.83	.....	.....	.....	27.75	.....	28.42	.....	28.75	.....	28.08	.....	28.58	.....	28.00	.....	27.92	.....
31	27.08	.....	.....	.....	27.50	.....	26.83	.....	.....	.....	28.17	.....	.....	.....	28.75	.....	.....	.....	28.75	.....	28.00	.....	.....	.....

Regular Stations

NORTH-WESTERN ONTARIO DISTRICT

River	Location	Drainage Area Sq. Miles	Township	District
Eagle	at Eagle River	970	Aubrey	Kenora
English	at Ear Falls	11,700		"
"	at Manitou Falls	14,600		"
"	near Oak Falls	15,570		"
"	at Pine Ridge, H.B.Co's. Post			"
Turtle	at Mountain Rapids	1,760		Rainy River
Wabigoon	near Quibell	2,400	Wabigoon	Kenora

Eagle River at Eagle River

Location—At the highway bridge, 1,000 feet south of the C. P. Ry. Crossing, in the Township of Aubrey, District of Kenora. This river is a tributary of the Wabigoon River.

Records Available—Discharge measurements from January, 1914. Daily gauge heights from February, 12, 1914.

Drainage Area—970 square miles.

Gauge—Vertical staff with enamelled face screwed to a 2 x 4 inch scantling, which is nailed to the south side of the bridge crib near the south-east corner, and next to the left bank of the river. The zero on the gauge (elev. 1,172.99) is referred to a bench mark (elev. 1,176.56, C.P.R. datum) painted on a point of rock on the left bank a few feet south-west of gauge.

Channel and Control—Straight for about 100 feet above the station, with the water flowing slowly. Below the section the channel is straight for about 20 feet, with the water running swiftly to the "Cascades." The banks are clean, high, rocky and not liable to overflow. The bed consists of rock, and is permanent. At extreme highwater the flow is cut up by the bridge piers, but under normal conditions the flow is all through one channel.

Discharge Measurements—Made from the highway bridge with a small Price current meter.

Winter Flow—Not affected by ice. The water at the section never freezes.

Accuracy—The station rating curve is well defined. Fluctuation in gauge heights is occasionally augmented by wind on Eagle Lake. This is in every way an exceptionally good station.

Observer—J. Nelson, Eagle River.

Daily Gauge Height in feet and Discharge in second-feet of Eagle River at Eagle River for 1917-8

Drainage Area, 970 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1173.87	264	1173.84	254	1173.89	269	1173.97	286	1173.97	286	1173.95	282	1173.91	273	1174.55	438	1174.99	605	1174.84	540	1174.72	495	1174.36	383
2	1173.84	258	1173.87	264	1173.91	273	1173.97	286	1173.99	291	1173.95	282	1173.89	269	1174.55	438	1174.99	605	1174.84	540	1174.72	495	1174.34	378
3	1173.82	253	1173.87	264	1173.93	278	1173.97	286	1173.99	291	1173.95	282	1173.89	269	1174.57	445	1174.97	595	1174.84	540	1174.72	495	1174.32	372
4	1173.82	253	1173.84	258	1173.93	278	1173.97	286	1173.99	291	1173.95	282	1173.91	273	1174.61	457	1174.95	585	1174.86	550	1174.70	488	1174.30	367
5	1173.82	253	1173.84	258	1173.95	282	1173.95	282	1173.99	291	1173.95	282	1175.93	278	1174.66	474	1174.93	580	1174.86	550	1174.66	474	1174.28	362
6	1173.82	253	1173.84	258	1173.97	286	1173.97	286	1173.97	286	1173.93	278	1173.95	278	1174.68	481	1174.93	580	1174.84	540	1174.64	468	1174.26	357
7	1175.80	249	1173.87	264	1173.99	291	1174.01	295	1173.97	286	1173.93	278	1173.95	282	1174.66	474	1174.91	570	1174.82	535	1174.61	457	1174.24	351
8	1173.78	245	1173.89	269	1174.01	295	1174.01	295	1172.97	286	1173.93	278	1173.97	286	1174.68	481	1174.91	570	1174.84	540	1174.59	451	1174.20	341
9	1173.80	249	1173.89	269	1173.97	286	1174.01	295	1173.97	286	1173.91	273	1174.03	300	1174.68	481	1174.91	570	1174.84	540	1174.57	445	1174.16	331
10	1173.76	241	1173.91	273	1173.95	282	1174.01	295	1173.97	286	1173.91	273	1174.07	309	1174.70	488	1174.89	560	1174.82	535	1174.55	438	1174.11	318
11	1173.66	221	1173.91	273	1173.93	278	1174.01	295	1173.97	286	1173.91	273	1174.09	314	1174.70	488	1174.89	560	1174.82	535	1174.57	445	1174.11	318
12	1173.66	221	1173.89	269	1173.93	278	1173.99	291	1173.97	286	1173.91	273	1174.09	314	1174.72	495	1174.89	560	1174.80	525	1174.57	445	1174.09	314
13	1173.64	218	1173.89	269	1173.91	273	1174.01	295	1173.97	286	1173.91	273	1174.11	318	1174.72	495	1174.91	570	1174.80	525	1174.57	445	1174.05	304
14	1173.61	212	1173.91	273	1173.89	269	1174.03	300	1173.97	286	1173.91	273	1174.16	331	1174.74	505	1174.91	570	1174.80	525	1174.57	445	1174.03	300
15	1173.64	218	1173.91	273	1173.89	269	1174.03	300	1173.97	286	1173.91	273	1174.18	336	1174.76	510	1174.91	570	1174.78	520	1174.57	445	1174.01	295
16	1173.64	218	1173.91	273	1173.89	269	1174.01	295	1173.97	286	1173.91	273	1174.18	336	1174.78	520	1174.93	580	1174.76	510	1174.57	445	1173.99	291
17	1173.66	221	1173.89	269	1173.91	273	1174.01	295	1173.97	286	1173.91	273	1174.20	341	1174.78	520	1174.93	580	1174.76	510	1174.55	438	1173.97	286
18	1173.70	229	1173.89	269	1173.93	278	1173.99	291	1173.95	282	1173.91	273	1174.22	346	1174.80	525	1174.91	570	1174.74	505	1174.55	438	1173.97	286
19	1173.74	237	1173.89	269	1173.95	282	1173.99	291	1173.95	282	1173.91	273	1174.24	351	1174.82	535	1174.91	570	1174.74	505	1174.53	432	1173.95	282
20	1173.80	249	1173.91	273	1173.97	286	1173.97	286	1173.95	282	1173.91	273	1174.26	357	1174.82	535	1174.91	570	1174.74	505	1174.51	426	1173.93	278
21	1173.82	253	1173.91	273	1173.97	286	1173.97	286	1173.93	278	1173.93	278	1174.30	367	1174.84	540	1174.91	570	1174.72	495	1174.51	426	1173.93	278
22	1173.82	253	1173.91	273	1173.97	286	1173.99	291	1173.93	278	1173.91	273	1174.34	378	1174.86	550	1174.89	560	1174.72	495	1174.49	420	1173.91	273
23	1173.89	269	1173.89	269	1173.95	272	1174.01	295	1173.93	278	1173.95	282	1174.39	391	1174.89	560	1174.89	560	1174.72	495	1174.49	420	1173.86	262
24	1173.89	269	1173.89	269	1173.95	282	1174.01	295	1173.93	278	1173.95	282	1174.41	397	1174.91	570	1174.89	560	1174.72	495	1174.51	426	1173.84	258
25	1173.87	264	1173.91	273	1173.95	282	1173.99	291	1173.93	278	1173.97	286	1173.43	403	1174.93	580	1174.86	550	1174.72	495	1174.51	426	1173.82	253
26	1173.84	258	1173.91	273	1173.95	282	1173.99	291	1173.93	278	1173.95	282	1174.43	403	1174.95	585	1174.86	550	1174.72	495	1174.49	420	1173.82	253
27	1173.91	273	1173.91	273	1173.97	286	1173.99	291	1173.95	282	1173.93	278	1174.45	408	1174.95	585	1174.86	550	1174.70	488	1174.49	420	1173.78	245
28	1173.93	278	1173.89	269	1173.97	286	1173.99	291	1173.95	282	1173.91	273	1174.45	408	1174.97	595	1174.84	540	1174.70	488	1174.47	414	1173.74	237
29	1173.95	282	1173.89	269	1173.95	282	1173.99	291	.....	....	1173.91	273	1174.49	420	1174.97	595	1174.84	540	1174.70	488	1174.45	408	1173.66	221
30	1173.97	286	1173.91	273	1173.95	282	1173.99	291	.....	....	1173.91	273	1174.53	432	1174.97	595	1174.84	540	1174.70	488	1174.43	403	1173.57	205
31	1173.89	269	.....	....	1173.95	282	1173.97	286	.....	....	1173.91	273	.....	....	1174.97	595	.....	....	1174.70	488	1174.41	397	.....	....

Monthly Discharge of Eagle River at Eagle River for year ending Sept. 30th, 1918

Drainage Area, 970 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October... (1917)	286	212	249	.29	.22	.26	.30
November "	273	258	269	.28	.27	.28	.31
December "	295	269	280	.30	.28	.29	.33
January .. (1918)	300	282	291	.31	.29	.30	.35
February	291	278	284	.30	.29	.29	.30
March	286	273	277	.29	.28	.29	.33
April	432	269	339	.45	.28	.35	.39
May	595	438	520	.61	.45	.54	.62
June.....	605	540	568	.62	.56	.59	.66
July	550	488	516	.57	.50	.53	.61
August	495	397	442	.51	.41	.46	.53
September	383	205	360	.39	.21	.31	.35
The year	605	205	362	.62	.21	.37	5.06

English River at Ear Falls

Location—At the foot of Lac Seul, about three miles below Pine Ridge Hudson's Bay Co's. Post, and about ¼ mile above upper Ear Falls, District of Kenora.

Records Available—Discharge measurements from July, 1914. Weekly gauge heights are secured here and daily gauge heights at a gauge at Pine Ridge Post.

Drainage Area—11,700 square miles.

Gauge—Vertical staff with enamelled face screwed to a 6-inch hewn spruce post which is firmly wedged in the rock of the left bank 200 feet below a 2-inch poplar, which is painted white and used as the initial point for soundings. The zero of the gauge (elev. 115.12) is referred to a bench mark (elev. 122.75) painted on a point of rock 5 feet above the gauge.

Channel and Control—Straight for about 300 feet above and below the station, then turning to the left widens out to the top of the falls. Both banks are high, rocky and wooded, and will not overflow. The bed of the stream at the section is apparently permanent; the current sluggish, and flowing through one channel at all stages. The natural control is wide, shallow and unobstructed.

Discharge Measurements—Made from a canoe with a small Price current meter.

Winter Flow—Ice conditions have only slight effect.

Accuracy—Back flow at the left bank causes a little difficulty in making accurate discharge measurements.

Observer—Robert Young, care of Hudson Bay Co's. Lac Seul Post, Sioux Lookout P.O.

Remarks—The very steady regimen of the English River, together with the lack of gauge readers, makes it possible and necessary to apply the gauge heights at Ear Falls to gauges at Manitou and Oak Falls. Gauge readings taken on nearly the same day were used in making up curves for the three stations, and the results obtained justify the assumptions made. No allowance is made for lag. With additional data it may be possible to extend the system to points farther down the river.

Daily Gauge Height in feet and Discharge in second-feet of English River at Ear Falls for 1917-8

Drainage Area, 11,700 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	119.00	5890	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	....	.....	.....	119.87	8330	.....	.....
2	119.49	7200	119.20	6400	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	119.79	8080	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	....	.....	.....	118.45	4590	.....	.....	.....	.....	.....	....	119.47	7150	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	118.95	5760	118.74	5260	.....	.....	118.24	4150	.....	.....	118.54	4790	.....	.....	.....	.....	.....	.....	119.70	7810
5	.....	.....	119.16	6300	.....	....	.....	.....	.....	.....	.....	.....	118.02	3740	.....	....	.....	.....	.....	.....	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	....	.....	.....	118.41	4500	.....	.....	.....	.....	.....	....	.....	.....	119.74	7930	.....	.....	.....	.....
7	119.20	6400	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	119.37	6870	.....	.....	.....	.....	.....	.....
8	.....	.....	119.16	6300	118.91	5660	118.69	5140	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	119.87	8330	.....	.....
9	119.37	6870	.....	.....	.....	....	.....	.....	.....	.....	118.20	4070	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	....	.....	.....	118.37	4420	.....	.....	.....	.....	118.79	5380	.....	.....	.....	.....	.....	.....	.....	.....
11	.....	.....	119.12	6190	.....	....	.....	.....	.....	.....	.....	.....	118.00	3700	.....	....	.....	.....	.....	.....	.....	.....	119.62	7580
12	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	119.70	7810	.....	.....	.....	.....
14	.....	.....	.....	.....	118.89	5620	118.62	4980	.....	.....	118.16	3990	.....	.....	.....	....	119.58	7460	.....	.....	.....	.....	.....	.....
15	.....	.....	119.04	5990	.....	....	.....	.....	118.33	4330	.....	.....	.....	.....	119.04	5990	.....	.....	.....	.....	119.87	8330	.....	.....
16	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	118.12	3920	.....	....	.....	.....	.....	.....	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	....	118.60	4930	118.31	4290	.....	.....	.....	.....	.....	....	.....	.....	119.79	8080	.....	.....	119.54	7350
19	.....	.....	.....	.....	118.89	5620	.....	.....	.....	.....	118.14	3960	.....	.....	119.12	6190	.....	.....	.....	.....	.....	.....	.....	.....
20	.....	.....	119.04	5990	.....	....	.....	.....	.....	.....	.....	.....	118.33	4330	.....	....	.....	.....	.....	.....	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....
22	.....	.....	.....	.....	118.81	5420	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	119.79	8080	.....	.....
23	.....	.....	.....	.....	.....	....	118.58	4880	118.29	4250	118.12	3920	.....	.....	.....	....	119.62	7580	.....	.....	.....	.....	.....	.....
24	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	119.14	6240	.....	.....	.....	.....	.....	.....	.....	.....
25	.....	.....	.....	.....	118.79	5380	.....	.....	.....	.....	.....	.....	118.41	4500	.....	....	.....	.....	.....	.....	.....	.....	119.37	6870
26	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	119.70	7810	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	....	118.54	4790	.....	.....	118.08	3840	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....
28	.....	.....	119.06	6040	.....	....	.....	.....	118.29	4250	.....	.....	118.47	4630	.....	....	119.79	8080	.....	.....	.....	.....	.....	.....
29	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	119.70	7810	.....	.....
30	.....	.....	.....	.....	118.79	5380	.....	.....	.....	.....	.....	.....	.....	.....	119.33	6750	.....	.....	.....	.....	.....	.....	.....	.....
31	119.12	6190	.....	.....	.....	....	118.50	4700	.....	.....	118.02	3740	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....

Monthly Discharge of English River at Ear Falls for year ending Sept. 30th, 1918

Drainage Area, 11,700 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	7,200	6,190	6,665	.62	.53	.57	.66
November "	6,400	5,990	6,173	.55	.51	.53	.59
December "	5,890	5,380	5,591	.50	.46	.48	.55
January 1918)	5,260	4,700	4,954	.45	.40	.42	.48
February	4,590	4,250	4,376	.39	.36	.37	.39
March	4,150	3,740	3,953	.35	.32	.34	.39
April	4,630	3,700	4,137	.40	.32	.35	.39
May.....	6,750	4,790	5,890	.58	.41	.50	.58
June.....	8,080	6,870	7,428	.69	.59	.63	.70
July	8,080	7,810	7,942	.69	.67	.68	.78
August	8,330	7,810	8,176	.71	.67	.70	.81
September	7,810	6,870	7,402	.67	.59	.63	.70
The year	8,330	3,700	6,057	.71	.32	.52	7.03

English River at Manitou Falls

Location—About 800 feet above the first chute of the Manitou Falls, and five miles below the mouth of the Mattawa River. The Cedar River enters the English River ½ mile below the metering section.

Records Available—Discharge measurements from July, 1914.

Drainage Area—14,600 square miles.

Gauge—Vertical staff with enamelled face screwed to a 6-inch pine post and firmly wedged and wired to the right bank 15 feet south of a 2-inch jack pine, which is used as the initial point for soundings. The zero of the gauge (elev. 89.37) is referred to a bench mark (elev. 100.43) painted on a point of rock 2.5 feet southeast of the initial point.

Channel and Control—About 1,200 feet above the station the channel begins to narrow down and turns to the right out of the lake above. It is comparatively straight thence to the station and falls. Both banks are high, rocky and wooded, and will not overflow. The bed of the stream is rocky and permanent. The current is slow above and moderately swift at the section.

Discharge Measurements—Made from a canoe with a small Price current meter.

Remarks—The very steady regimen of the English River, together with the lack of gauge readers, makes it possible and necessary to apply the gauge heights at Ear Falls to the gauge at Manitou Falls. Gauge readings taken on nearly the same day were used in makifig up curves for the two stations, and the results obtained justify the assumptions made. No allowance is made for "lag."

Daily Gauge Height in feet and Discharge in second-feet of English River at Manitou Falls for 1917-8

Drainage Area, 14,600 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	91.23	7180	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.50	9850	.....	.....
2	92.51	8660	91.75	7760	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.29	9600	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	89.78	5590	.....	.....	.....	.....	.....	.....	92.46	8600	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	91.09	7030	90.54	6420	.....	.....	89.23	4980	.....	.....	90.02	5850	.....	.....	.....	.....	.....	.....	93.06	9320
5	.....	.....	91.65	7640	.....	.....	.....	.....	.....	.....	.....	.....	88.66	4380	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	89.68	5480	.....	.....	.....	.....	.....	.....	.....	.....	93.16	9440	.....	.....	.....	.....
7	91.75	7760	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	92.19	8280	.....	.....	.....	.....	.....	.....
8	.....	.....	91.65	7640	90.99	6920	90.41	6280	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.50	9850	.....	.....
9	92.19	8280	.....	.....	.....	.....	.....	.....	.....	.....	89.13	4870	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	89.57	5360	.....	.....	.....	.....	90.67	6570	.....	.....	.....	.....	.....	.....	.....	.....
11	.....	.....	91.54	7520	.....	.....	.....	.....	.....	.....	.....	.....	88.61	4330	.....	.....	.....	.....	.....	.....	.....	.....	92.85	9070
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.06	9320	.....	.....	.....	.....
14	.....	.....	.....	.....	90.93	6850	90.23	6080	.....	.....	89.03	4760	.....	.....	.....	.....	92.75	8950	.....	.....	.....	.....	.....	.....
15	.....	.....	91.33	7290	.....	.....	.....	.....	89.47	5250	.....	.....	.....	.....	91.33	7290	.....	.....	.....	.....	93.50	9850	.....	.....
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	88.92	4640	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	90.18	6030	89.42	5190	.....	.....	.....	.....	.....	.....	.....	.....	93.29	9600	.....	.....	92.64	8820
19	.....	.....	.....	.....	90.93	6850	.....	.....	.....	.....	88.97	4700	.....	.....	91.54	7520	.....	.....	.....	.....	.....	.....	.....	.....
20	.....	.....	91.33	7290	.....	.....	.....	.....	.....	.....	.....	.....	89.47	5250	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22	.....	.....	.....	.....	90.73	6630	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.29	9600	.....	.....
23	.....	.....	.....	.....	.....	.....	90.13	5970	89.36	5130	88.92	4640	.....	.....	.....	.....	92.85	9070	.....	.....	.....	.....	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	91.59	7580	.....	.....	.....	.....	.....	.....	.....	.....
25	.....	.....	.....	.....	90.67	6570	.....	.....	.....	.....	.....	.....	89.68	5480	.....	.....	.....	.....	.....	.....	.....	.....	92.19	8280
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.06	9320	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	90.02	5850	.....	.....	88.82	4540	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	.....	.....	91.39	7360	.....	.....	.....	.....	89.36	5130	.....	.....	89.84	5650	.....	.....	93.29	9600	.....	.....	.....	.....	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.06	9320	.....	.....
30	.....	.....	.....	.....	90.67	6570	.....	.....	.....	.....	.....	.....	.....	.....	92.09	8160	.....	.....	.....	.....	.....	.....	.....	.....
31	91.54	7520	.....	.....	.....	.....	89.92	5740	.....	.....	88.66	4380	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Monthly Discharge of English River at Manitou Falls for year ending Sept. 30th, 1918

Drainage Area, 14,600 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	8,660	7,520	8,055	.59	.52	.55	.63
November "	7,760	7,290	7,500	.53	.50	.51	.57
December "	7,180	6,570	6,825	.49	.45	.47	.54
January (1918)	6,420	5,740	6,053	.44	.39	.41	.47
February	5,590	5,130	5,304	.38	.35	.36	.37
March	4,980	4,380	4,696	.34	.30	.32	.37
April	5,650	4,330	4,955	.39	.30	.34	.38
May	8,160	5,850	7,161	.56	.40	.49	.56
June	9,600	8,280	8,900	.66	.57	.61	.68
July	9,600	9,320	9,456	.66	.64	.65	.75
August	9,850	9,320	9,694	.67	.64	.66	.76
September	9,320	8,280	8,872	.64	.57	.61	.68
The year	9,850	4,330	7,289	.67	.30	.50	6.77

English River near Oak Falls

Location—About one mile above the upper Oak Fall, just above Little Rapids, and about one-half mile below Wilcox Lake, District of Kenora.

Records Available—Discharge measurements from August, 1914.

Drainage Area—15,570 square miles.

Gauge—Vertical staff with enamelled face screwed to a cedar post and firmly wedged in rock on the right bank 200 feet above the metering section. The zero of the gauge (elev. 194.12) is referred to a bench mark (elev. 200.00) painted on a rock in the river near the right bank and 20 feet above the final point for soundings. The initial point for soundings is located on the left bank, and consists of the head of a nail driven in the side of a 12-inch poplar blazed and marked I.P., N. 70° W.

Channel and Control—Straight for about 300 feet above and ½ mile below the station. Both banks are high, rocky and wooded, and not liable to overflow. The bed of the stream is rocky and practically permanent. The current is sluggish above and moderately swift below the station, a small rapid existing about 800 feet below.

Discharge Measurements—Made from a canoe with a small Price current meter.

Remarks—The very steady regimen of the English River, together with the lack of gauge readers, makes it possible and necessary to apply the gauge heights at Ear Falls to the gauge at Oak Falls. Gauge readings taken on nearly the same day were used in making up curves for the two stations, and the results obtained justify the assumptions made. No allowance is made for "lag."

Daily Gauge Height in feet and Discharge in second-feet of English River near Oak Falls for 1916-7

Drainage Area, 15,570 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	195.75	7520	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	196.91	10680	.....	.....
2	196.41	9180	196.02	8100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	196.80	10350	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	195.02	6000	.....	.....	.....	.....	.....	.....	196.38	9090	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	195.68	7280	195.41	6740	.....	.....	194.74	5490	.....	.....	195.14	6210	.....	.....	.....	.....	.....	.....	.....	.....
5	.....	.....	195.96	7960	.....	.....	.....	.....	.....	.....	.....	.....	194.45	5020	.....	.....	.....	.....	.....	.....	.....	.....	196.68	9990
6	.....	.....	.....	.....	.....	.....	.....	.....	194.97	5910	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	196.02	8100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	196.24	8670	196.73	10140	.....	.....	.....	.....
8	.....	.....	195.96	7960	195.63	7180	195.34	6600	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	196.91	10680	.....	.....
9	196.24	8670	.....	.....	.....	.....	.....	.....	.....	.....	194.69	5400	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	194.92	5820	.....	.....	.....	.....	195.48	6880	.....	.....	.....	.....	.....	.....	.....	.....
11	.....	.....	195.91	7840	.....	.....	.....	.....	.....	.....	.....	.....	194.42	4980	.....	.....	.....	.....	.....	.....	.....	.....	196.58	9690
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	196.68	9990	.....	.....	.....	.....
14	.....	.....	.....	.....	195.61	7140	195.25	6420	.....	.....	194.64	5320	.....	.....	.....	.....	196.52	9510	.....	.....	.....	.....	.....	.....
15	.....	.....	195.80	7620	.....	.....	.....	.....	194.86	5710	.....	.....	.....	.....	195.80	7620	.....	.....	.....	.....	196.91	10680	.....	.....
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	195.22	6360	194.83	5650	.....	.....	194.59	5240	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	.....	.....	.....	.....	195.61	7140	.....	.....	.....	.....	194.61	5270	.....	.....	195.91	7840	.....	.....	196.80	10350	.....	.....	196.47	9360
20	.....	.....	195.80	7620	.....	.....	.....	.....	.....	.....	.....	.....	194.86	5710	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22	.....	.....	.....	.....	195.50	6920	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
23	.....	.....	.....	.....	.....	.....	195.19	6300	194.81	5620	194.59	5240	.....	.....	.....	.....	196.58	9690	.....	.....	196.80	10350	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	195.94	7910	.....	.....	.....	.....	.....	.....	.....	.....
25	.....	.....	.....	.....	195.48	6880	.....	.....	.....	.....	.....	.....	194.97	5910	.....	.....	.....	.....	.....	.....	.....	.....	196.24	8670
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	196.68	9990	.....	.....	.....	.....
27	.....	.....	.....	.....	.....	.....	195.14	6210	.....	.....	194.53	5140	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	.....	.....	195.83	7680	.....	.....	.....	.....	194.81	5620	.....	.....	195.05	6050	.....	.....	196.80	10350	.....	.....	.....	.....	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	.....	.....	.....	.....	195.48	6880	.....	.....	.....	.....	.....	.....	.....	.....	196.19	8520	.....	.....	.....	.....	196.68	9990	.....	.....
31	195.91	7840	.....	.....	.....	.....	195.09	6120	.....	.....	194.45	5020	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Monthly Discharge of English River near Oak Falls for year ending Sept. 30th, 1918

Drainage Area, 15,570 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October... (1917)	9,180	7,840	8,448	.59	.50	.54	.62
November "	8,100	7,620	7,826	.52	.49	.50	.56
December "	7,520	6,880	7,118	.48	.44	.46	.53
January ...(1918)	6,740	6,120	6,393	.43	.39	.41	.47
February .. "	6,000	5,620	5,761	.39	.36	.37	.39
March ..... "	5,490	5,020	5,268	.35	.32	.34	.39
April. ..... "	6,050	4,980	5,485	.39	.32	.35	.39
May..... "	8,520	6,210	7,497	.55	.40	.48	.55
June..... "	10,350	8,670	9,462	.66	.56	.61	.68
July ..... "	10,350	9,990	10,164	.66	.64	.65	.75
August .... "	10,680	9,990	10,476	.69	.64	.67	.77
September. "	9,990	8,670	9,428	.64	.56	.61	.68
The year.....	10,680	4,980	7,777	.69	.32	.50	6.78

English River at Pine Ridge, H .B. Co.'s Post

Gauge—This gauge is located on the wharf of the Hudson Bay Company's Post at Pine Ridge and is read by the same man, by whom the Ear Falls gauge is read. This gauge is read daily with the object of securing data to show probable fluctuations at the Ear Falls gauge.

Daily Gauge Height and Discharge of English River near Pine Ridge for 1917-18

Drainage Area, Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	93.19	6400	92.93	5840	92.73	5410	92.37	4680	92.09	4150	91.82	3670	92.50	4940	93.31	6650	94.11	8360	94.10	8340	93.93	7960
2	.....	.....	93.20	6420	92.91	5800	92.70	5350	92.34	4630	92.09	4150	91.82	3670	92.58	5100	93.26	6550	94.10	8340	94.22	8590	93.97	8050
3	.....	.....	93.21	6440	92.93	5840	92.73	5410	92.31	4570	92.13	4230	91.83	3690	92.65	5240	93.51	7080	94.12	8380	94.26	8680	93.94	7980
4	.....	.....	93.23	6480	92.93	5840	92.71	5370	92.30	4550	92.09	4150	91.85	3720	92.73	5410	93.51	7080	94.04	8210	94.01	8140	93.95	8000
5	.....	.....	93.12	6240	92.91	5800	92.67	5290	92.30	4550	92.10	4170	91.85	3720	92.74	5430	93.60	7270	93.85	7800	94.10	8340	93.93	7960
6	.....	.....	93.19	6400	92.91	5800	92.64	5220	92.29	4530	92.12	4210	91.84	3710	92.79	5540	93.22	6460	93.95	8000	94.18	8510	93.89	7880
7	.....	.....	93.17	6360	92.91	5800	92.64	5220	92.30	4550	92.11	4190	91.86	3740	92.83	5620	93.35	6740	94.12	8380	93.97	8050	93.97	8050
8	.....	.....	93.13	6270	92.89	5760	92.62	5180	92.30	4550	92.07	4110	91.87	3760	92.87	5710	93.49	7040	94.15	8440	94.14	8430	93.99	8100
9	.....	.....	93.10	6200	92.86	5690	92.60	5140	92.30	4550	92.06	4100	91.89	3790	92.73	5410	93.65	7380	94.14	8430	94.14	8430	93.83	7750
10	.....	.....	93.11	6220	92.88	5740	92.59	5120	92.31	4570	92.04	4060	91.85	3720	92.79	5540	93.69	7450	94.16	8470	94.14	8430	93.89	7880
11	.....	.....	93.09	6180	92.90	5780	92.58	5100	92.29	4530	92.01	4010	91.85	3720	92.94	5860	93.33	6690	94.18	8510	94.06	8250	93.89	7880
12	.....	.....	93.11	6220	92.85	5670	92.58	5100	92.25	4440	92.04	4060	91.85	3720	92.79	5540	93.60	7270	94.18	8510	94.10	8340	93.78	7650
13	.....	.....	93.07	6140	92.89	5760	92.56	5060	92.24	4440	92.02	4030	91.87	3760	92.76	5480	93.61	7290	94.26	8680	93.97	8050	93.76	7600
14	.....	.....	92.96	5910	92.85	5670	92.56	5060	92.22	4400	91.99	3970	91.89	3790	92.93	5840	93.67	7410	94.22	8590	94.01	8140	93.74	7560
15	.....	.....	92.97	5930	92.89	5760	92.55	5040	92.20	4360	92.00	3990	91.92	3850	93.03	6050	93.76	7600	94.10	8340	94.06	8250	93.70	7470
16	.....	.....	93.06	6120	92.87	5710	92.52	4980	92.21	4380	92.00	3990	91.94	3880	93.11	6220	93.70	7470	94.18	8510	94.14	8430	93.68	7430
17	.....	.....	92.92	5820	92.85	5670	92.50	4940	92.21	4380	91.99	3970	92.01	4010	93.04	6070	93.76	7600	94.10	8340	94.01	8140	93.72	7510
18	.....	.....	92.91	5800	92.85	5670	92.49	4920	92.20	4360	91.97	3940	92.05	4080	93.12	6240	93.83	7750	94.10	8340	94.01	8140	93.79	7670
19	.....	.....	93.00	5990	92.85	5670	92.48	4900	92.17	4300	91.96	3920	92.12	4210	93.16	6330	93.89	7880	94.14	8430	94.04	8210	93.58	7250
20	.....	.....	92.99	5970	92.82	5600	92.50	4940	92.16	4280	91.95	3900	92.14	4250	92.99	5970	93.70	7470	94.18	8510	94.06	8250	93.64	7350
21	.....	.....	92.89	5760	92.80	5560	92.48	4900	92.16	4280	91.92	3850	92.14	4250	93.28	6590	93.56	7190	94.10	8340	94.14	8430	93.70	7470
22	.....	.....	93.02	6030	92.76	5480	92.47	4880	92.13	4230	91.91	3830	92.18	4320	93.26	6550	93.82	7730	94.18	8510	94.01	8140	93.62	7310
23	.....	.....	93.02	6030	92.74	5430	92.48	4900	92.12	4210	91.96	3920	92.21	4380	93.10	6200	93.76	7600	94.22	8590	94.14	8430	93.64	7350
24	.....	.....	92.97	5930	92.74	5430	92.46	4860	92.10	4170	91.96	3920	92.29	4530	93.26	6550	93.83	7750	94.06	8250	94.10	8340	93.60	7270
25	.....	.....	92.99	5970	92.74	5430	92.42	4780	92.12	4210	91.91	3830	92.26	4470	93.41	6860	93.87	7840	94.14	8430	94.10	8340	93.56	7190
26	.....	.....	93.01	6010	92.74	5430	92.43	4800	92.14	4250	91.89	3790	92.37	4680	93.28	6590	94.02	8160	94.10	8340	94.06	8250	93.60	7270
27	.....	.....	93.00	5990	92.73	5410	92.43	4800	92.12	4210	91.91	3830	92.42	4780	93.37	6780	93.98	8070	94.18	8510	93.93	7960	93.39	6820
28	.....	.....	92.99	5970	92.70	5350	92.41	4760	92.13	4230	91.90	3810	92.46	4860	93.43	6910	93.82	7730	94.10	8340	93.97	8050	93.33	6690
29	.....	.....	92.99	5970	92.72	5390	92.39	4720	.....	....	91.88	3780	92.42	4780	93.44	6930	93.97	8060	94.10	8340	94.01	8140	93.43	6910
30	.....	.....	92.94	5860	92.72	5390	92.37	4680	.....	....	91.86	3740	92.44	4820	93.46	6970	94.06	8250	94.14	8430	94.06	8250	93.29	6610
31	.....	.....	.....	....	92.70	5350	92.37	4680	.....	....	91.85	3720	.....	....	93.54	7140	.....	....	94.14	8430	94.06	8250	.....	....

Monthly Discharge of English River at Pine Ridge, H.B. Co.'s Post for year ending Sept. 30th, 1918

Drainage Area, Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	.....	.....	.....	.....	.....	.....	.....
November "	6,480	5,760	6,101	.55	.49	.52	.58
December "	5,840	5,350	5,630	.50	.46	.48	.55
January (1918)	5,410	4,680	5,016	.46	.40	.43	.50
February	4,680	4,170	4,407	.40	.36	.38	.40
March.....	4,230	3,720	3,978	.36	.32	.34	.39
April	4,860	3,670	4,078	.42	.31	.35	.39
May	7,140	4,940	6,052	.61	.42	.52	.60
June	8,250	6,460	7,417	.71	.55	.64	.71
July.....	8,680	7,800	8,390	.74	.67	.72	.83
August.....	8,680	7,960	8,281	.74	.68	.71	.82
September.....	8,100	6,610	7,529	.69	.57	.64	.71
The year	8,680	3,670	6,080	.74	.31	.52	6.46

Turtle River at Mountain Rapids

Location—About 300 feet above Mountain Rapids, and about 8 miles from the Olive Mine, 12 miles from Mine Centre, which is on the C. N. Ry., in the Rainy River District.

Records Available—Monthly discharge measurements from August, 1914. Daily gauge heights from August 9, 1914.

Drainage Area—1,760 square miles.

Gauge—Vertical steel staff gauge with enamelled face, graduated in feet and inches, and fastened on a crib pier at the C. N. Ry. saw mill, 12 miles from the station. The gauge is located 1,000 feet south of the mouth of Little Turtle River, on the east shore of Little Turtle Lake. Zero of gauge (elevation 82.99) is referred to a bench mark (assumed elevation 100.00) established on a rock with white paint, 35 feet north-east of the gauge, at the C. N. Ry. mill at Mine Centre.

Channel and Control—Straight for about 1,000 feet above and below the station, the water running slowly. The banks are high, wooded and rocky. The bed of the stream is sandy and clean, one channel existing at all stages. The river is used extensively for log driving, and the log jams in Otter Falls affect the section somewhat.

Discharge Measurements—Made from a canoe with a small Price current meter.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice and measurements are made during the winter to determine the flow.

Accuracy—Open water rating curve fairly well defined between gauge heights 91.50 and 94.50. The relation of gauge height to discharge during the log-driving period is affected by back water from log jams.

Observer—Hiram Smith, Mine Centre.

Daily Gauge Height and Discharge of Turtle River at Mountain Rapids for 1917-8

Drainage Area, 1,760 Square Miles.

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	92.34	1150	91.94	960	91.47	625	90.91	178	90.61	102	90.45	65	91.16	620	92.80	1390	93.16	1610	92.60	1280	92.76	1370	92.52	1240
2	92.32	1140	91.91	945	91.45	575	90.91	178	90.61	102	90.45	65	91.32	685	92.93	1470	93.41	1770	92.56	1260	92.78	1380	92.46	1210
3	92.32	1140	91.91	945	91.42	565	90.91	178	90.59	98	90.45	65	91.45	735	93.05	1540	93.55	1870	92.55	1250	92.76	1370	92.42	1190
4	92.26	1110	91.88	930	91.39	550	90.91	178	90.57	92	90.45	65	91.49	755	93.10	1580	93.73	1990	92.64	1310	92.79	1390	92.40	1180
5	92.21	1080	91.87	925	91.37	510	90.89	172	90.57	92	90.45	65	91.53	775	93.14	1600	93.81	2050	92.77	1380	92.85	1420	92.33	1140
6	92.14	1050	91.87	925	91.33	496	90.89	172	90.57	92	90.43	61	91.57	790	93.11	1580	93.88	2100	92.81	1400	92.91	1460	92.28	1120
7	92.08	1020	91.87	925	91.32	492	90.86	165	90.57	92	90.43	61	91.64	825	93.24	1660	93.93	2140	92.81	1400	92.94	1480	92.25	1100
8	92.04	1000	91.87	925	91.30	485	90.84	160	90.57	92	90.43	61	91.66	830	93.41	1770	93.93	2140	92.82	1410	92.97	1500	92.24	1100
9	92.00	985	91.87	925	91.28	478	90.84	160	90.57	92	90.41	51	91.66	830	93.49	1820	93.91	2120	92.77	1380	92.95	1490	92.22	1080
10	91.93	955	91.87	925	91.25	468	90.82	155	90.55	88	90.41	51	91.66	830	93.51	1840	93.98	2170	92.71	1350	92.98	1500	92.18	1070
11	91.88	930	91.83	910	91.22	422	90.82	155	90.55	88	90.41	51	91.64	825	93.47	1810	93.96	2160	92.73	1360	92.96	1490	92.19	1080
12	91.82	905	91.81	900	91.20	415	90.82	155	90.55	88	90.41	51	91.64	825	93.45	1800	93.89	2110	92.74	1360	92.93	1470	92.19	1080
13	91.80	895	91.78	885	91.17	404	90.82	155	90.53	82	90.41	51	91.66	830	93.43	1780	93.85	2080	92.74	1360	93.05	1540	92.19	1080
14	91.82	905	91.76	875	91.16	401	90.78	145	90.53	82	90.41	51	91.68	840	93.34	1730	93.86	2090	92.79	1390	93.11	1580	92.15	1060
15	91.79	890	91.74	870	91.11	384	90.76	140	90.53	82	90.39	54	91.70	850	93.28	1690	93.81	2050	92.84	1420	93.01	1520	92.14	1050
16	91.76	875	91.72	860	91.09	342	90.76	140	90.51	78	90.39	54	91.74	870	93.19	1630	93.70	1970	92.84	1420	92.99	1510	92.10	1030
17	91.81	900	91.69	845	91.07	334	90.74	135	90.51	78	90.37	50	91.78	885	93.16	1610	93.68	1960	92.84	1420	92.96	1490	92.06	1010
18	91.88	930	91.67	835	91.05	328	90.74	135	90.51	78	90.37	50	91.87	925	93.12	1590	93.45	1800	92.83	1410	92.92	1470	92.02	995
19	91.92	950	91.66	830	91.01	314	90.74	135	90.49	73	90.39	54	91.95	960	93.04	1540	93.24	1660	92.81	1400	92.88	1440	92.01	990
20	91.91	945	91.63	820	91.01	314	90.72	130	90.49	73	90.41	57	91.99	980	93.08	1560	93.19	1630	92.76	1370	92.87	1440	92.00	985
21	91.90	940	91.64	825	90.99	272	90.72	130	90.49	73	90.41	57	91.99	980	92.94	1480	93.05	1550	92.77	1380	92.83	1410	91.96	965
22	91.85	920	91.64	825	90.99	272	90.70	125	90.49	73	90.41	57	91.99	980	93.00	1510	92.93	1470	92.77	1380	92.74	1360	91.94	960
23	91.82	905	91.61	765	90.97	264	90.70	125	90.47	69	90.41	78	91.99	980	93.01	1520	92.87	1440	92.75	1370	92.72	1350	91.93	955
24	91.82	905	91.61	765	90.97	264	90.68	120	90.49	73	90.43	108	91.95	960	92.99	1510	92.83	1410	92.73	1360	92.74	1360	91.90	940
25	91.82	905	91.60	760	90.95	258	90.68	120	90.47	69	90.49	148	91.84	915	92.99	1510	92.76	1370	92.68	1330	92.72	1350	91.86	920
26	91.85	920	91.57	705	90.93	216	90.68	120	90.47	69	90.53	184	91.82	905	92.99	1510	92.74	1360	92.62	1300	92.69	1330	91.83	910
27	91.90	940	91.57	705	90.93	216	90.68	120	90.47	69	90.57	230	91.80	895	92.99	1510	92.73	1360	92.60	1280	92.61	1290	91.80	895
28	91.96	965	91.54	690	90.93	216	90.68	120	90.47	69	90.66	296	91.78	885	92.96	1490	92.73	1360	92.59	1280	92.60	1280	91.78	885
29	91.97	970	91.50	635	90.91	208	90.66	115	.....	.....	90.72	252	92.16	1060	92.92	1470	92.76	1370	92.69	1330	92.59	1280	91.75	870
30	91.97	970	91.47	625	90.91	208	90.66	115	.....	.....	90.80	415	92.49	1230	92.91	1460	92.70	1340	92.75	1370	92.56	1260	91.72	860
31	91.96	965	.....	.....	90.91	208	90.64	110	.....	.....	90.99	515	.....	.....	92.91	1460	.....	.....	92.76	1370	92.53	1250	.....	.....

Monthly Discharge of Turtle River at Mountain Rapids for year ending September 30th, 1918

Drainage Area, 1,760 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	1,150	875	970	.65	.50	.55	.63
November "	960	625	842	.55	.36	.48	.54
December "	625	208	374	.36	.12	.21	.24
January (1918)	178	110	143	.10	.06	.08	.09
February	102	69	82	.06	.04	.05	.05
March	515	50	116	.29	.03	.07	.08
April	1,230	620	875	.70	.35	.50	.56
May	1,840	1,390	1,594	1.05	.79	.91	1.05
June	2,170	1,340	1,783	1.23	.76	1.01	1.13
July	1,420	1,250	1,357	.81	.71	.77	.89
August	1,580	1,250	1,414	.90	.71	.80	.92
September	1,240	860	1,032	.70	.49	.59	.66
The year	2,170	50	886	1.23	.03	.50	6.83

Wabigoon River near Quibell

Location—About 200 feet above the second fall from the G.T.P. Railway bridge, and ½ mile below the bridge which spans the first fall. One mile east from Quibell Station, Township of Wabigoon, District of Kenora.

Records Available—Discharge measurements from June, 1914.

Drainage Area—2,400 square miles.

Gauge—Vertical staff with enamelled face screwed to a 5-inch hewn spruce post firmly wedged and braced to the rock on the right bank of the river 1,200 feet above the metering system. Th zero of the gauge (elev. 1,061.64) is referred to a bench mark (elev. 1,069.46, G.T.P. datum) painted on a point of rock just below the gauge. The initial point for soundings is a spike driven in the rock on the left bank. The gauge is read once a day during open season and once every other day during winter months.

Channel and Control—1,200 feet above the station the channel takes a sharp bend to the right, thence running comparatively straight to the station and falls. The water is sluggish above and moderately swift at the station. The banks are high, rocky and wooded. The bed of the stream is full of boulders and crevices. One channel exists at all stages.

Discharge Measurements—Made from canoe and ice with a small Price current meter.

Regulation—The Dryden Pulp and Power Company operate a plant on the Wabigoon River at Dryden, which runs 24 hours per day with the exception of Sundays and holidays.

Winter Flow—Ice formation is very heavy here, and the winter flow is somewhat disturbed by it.

Accuracy—Rating curve fairly well defined, and estimates for open water flow only have been made.

Observer—D. C. Warner, Quibell.

Daily Gauge Height and Discharge of Wabigoon River near Quibell for 1917-8

Drainage Area, 2,400 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1062.64	625	1063.18	....	1063.20	....	1063.04	In the absence of measurements no attempt has been made to estimate the winter flow.	1063.04	....	063.02	....	1064.14	....	1064.68	1630	1065.72	2250	1063.91	1210	1063.66	1080	1062.93	735
2	1062.56	600	1063.20	....	1063.18	....	1063.06		1063.06	....	1062.99	....	1064.26	....	1064.81	1710	1065.76	2280	1063.91	1210	1063.64	1070	1062.91	725
3	1062.64	625	1063.20	....	1063.16	....	1063.04		1063.08	....	1062.97	....	1064.39	....	1064.97	1800	1065.72	2250	1063.95	1230	1063.64	1070	1062.89	715
4	1062.72	650	1063.22	....	1063.14	....	1063.04		1063.10	....	1062.95	....	1064.47	....	1065.10	1880	1065.68	2230	1063.95	1230	1063.62	1060	1062.87	710
5	1062.74	660	1063.24	....	1063.12	....	1063.06		1063.12	....	1062.93	....	1064.14	....	1065.31	2010	1065.64	2200	1063.93	1220	1063.60	1050	1062.85	700
6	1062.76	665	1063.24	....	1063.10	....	1063.04		1063.14	....	1062.91	....	1064.02	....	1065.47	2100	1065.60	2180	1063.91	1210	1063.58	1040	1062.83	690
7	1062.74	660	1063.26	....	1063.08	....	1063.02		1063.12	....	1062.89	....	1064.06	....	1065.16	1920	1065.56	2160	1063.89	1200	1063 56	1030	1062.81	685
8	1062.74	660	1063.29	....	1063.06	....	1062.99		1063.12	....	1062.87	....	1064.10	....	1064.85	1730	1065.53	2140	1063.87	1180	1063.53	1020	1062.79	675
9	1062.72	650	1063.31	....	1063.02	....	1062.97		1063.10	....	1062.85	....	1064.08	....	1064.72	1650	1065.51	2130	1063.85	1180	1063.51	1000	1062.76	665
10	1062.72	650	1063.33	....	1062.99	....	1062.95		1063.08	....	1062.83	....	1064.10	....	1064.64	1610	1065.43	2080	1063.83	1160	1063.49	995	1062.79	675
11	1062.74	660	1063.33	....	1063.02	....	1062.93		1063.06	....	1062.81	....	1064.22	....	1064.58	1570	1065.29	1990	1063.81	1160	1063.47	985	1062.79	675
12	1062.72	650	1063.31	....	1063.04	....	1062.91		1063.06	....	1062.76	....	1064.56	....	1064.47	1510	1065.22	1950	1063.78	1140	1063.45	975	1062.76	665
13	1062.70	645	1063.29	....	1063.06	....	1062.89		1063.08	....	1062.72	....	1064.81	....	1064.31	1430	1065.14	1900	1063.81	1160	1063.43	965	1062.74	660
14	1062.68	640	1063.26	....	1063.06	....	1062.87		1063.10	....	1062.70	....	1065.31	....	1064.31	1430	1065.06	1860	1063.81	1160	1063.41	955	1062.74	660
15	1062.66	630	1063.24	....	1063.08	....	1062.85		1063.10	....	1062.68	....	1065.39	....	1064.39	1470	1064.97	1800	1063.79	1140	1063.39	940	1062.72	650
16	1062.64	625	1063.22	....	1063.08	....	1062.83		1063.03	....	1062.66	....	1065.64	....	1064.47	1510	1064.89	1750	1063.76	1130	1063.37	935	1062.72	650
17	1062.66	630	1063.22	....	1063.10	....	1062.87		1063.10	....	1062.64	....	1065.56	....	1064.56	1560	1064.76	1680	1063.74	1120	1063.35	925	1062.70	645
18	1062.68	640	1063.20	....	1063.06	....	1062.91		1063.10	....	1062.64	....	1065.39	....	1064.58	1570	1064.47	1510	1063.72	1110	1063.33	915	1062.68	640
19	1062.72	650	1063.16	....	1063.04	....	1062.97		1063.08	....	1062.66	....	1065.31	....	1064.60	1580	1064.31	1430	1063.70	1100	1063.31	905	1062.66	630
20	1062.83	690	1063.14	....	1062.99	....	1063.02		1063.10	....	1062.68	....	1065.22	....	1064.72	1650	1064.16	1340	1063.68	1090	1063.26	880	1062.66	630
21	1062.83	690	1063.16	....	1062.97	....	1063.06		1063.12	....	1062.72	....	1065.14	....	1064.89	1750	1063.89	1200	1063.66	1080	1063.22	865	1062.64	625
22	1062.85	700	1063.18	....	1062.95	....	1063.08		1063.14	....	1062.76	....	1064.72	....	1065.01	1830	1063.83	1160	1063.64	1070	1063.18	845	1062.64	625
23	1062.87	710	1063.34	....	1062.93	....	1063.06		1063.16	....	1062.81	....	1064.56	....	1065.22	1950	1063.76	1130	1063.62	1060	1063.14	830	1062.66	630
24	1062.89	715	1063.31	....	1062.91	....	1063.04		1063.14	....	1062.89	....	1064.41	....	1065.35	2030	1063.74	1120	1063.60	1050	1063.10	810	1062.64	625
25	1062.91	725	1063.33	....	1062.91	....	1063.02		1063.10	....	1062.91	....	1064.31	....	1065.64	2200	1063.74	1120	1063.58	1040	1063.08	800	1062.62	615
26	1062.95	740	1063.33	....	1062.93	....	1062.99		1063.08	....	1062.93	....	1064.22	....	1065.72	2250	1063.72	1110	1063.60	1050	1063.06	790	1062.60	610
27	1062.97	750	1063.31	....	1062.95	....	1062.97		1063.06	....	1063.02	....	1064.18	....	1065.81	2310	1063.74	1120	1063.64	1070	1063.03	780	1062.58	605
28	1063.04	785	1063.29	....	1062.97	....	1062.99		1063.04	....	1063.10	....	1064.14	....	1065.85	2330	1063.81	1160	.....	1070	1063.01	770	1062.56	600
29	1063.06	790	1063.26	....	1062.99	....	1063.02		.....	....	1063.31	....	1064.18	....	1065.59	2170	1063.85	1180	.....	1070	1062.99	760	1062.58	605
30	1063.08	800	1063.24	....	1063.02	....	1063.02		.....	....	1063.66	....	1064.31	....	1065.97	2400	1063.93	1220	.....	1070	1062.97	750	1062.58	605
31	1063.18	845	.....	....	1063.02	....	1063.04		.....	....	1064.06	....	.....	....	1065.89	2350	.....	....	.....	1070	1062.95	740	.....	....

Monthly Discharge of Wabigoon River near Quibell for year ending September 30th, 1918

Drainage Area, 2,400 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	845	600	682	.35	.25	.28	.32
November "	.....	.....	.....	.....	.....	.....	.....
December "	.....	.....	.....	.....	.....	.....	.....
January .. (1918)	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May	2,400	1,430	1,835	1.00	.60	.76	.88
June	2,280	1,110	1,688	.95	.46	.70	.78
July	1,230	1,040	1,130	.51	.43	.47	.54
August	1,080	740	921	.45	.31	.38	.44
September	735	600	654	.31	.25	.27	.30
The year	2,400	600	1,152	1.00	.25	.48	3.28

Regular Stations

SOUTH-WESTERN ONTARIO DISTRICT

River	Location	Drainage Area Sq. Miles	Township	County
Beaver	near Kimberley	100	Euphrasia	Grey.
Credit	at Cataract Jct	85	Caledon	Peel.
Rocky Saugeen	near Markdale	96	Glenelg	Grey.
Saugeen	near Port Elgin	1,565	Saugeen	Bruce.
"	near Walkerton	850	Brant	"
Sydenham	near Owen Sound	71	Derby	Grey.
Thames, Main stream	at Kilworth	1,270	Delaware	Middlesex.
" North Branch	near Fanshawe	585	London	"
" South Branch	near Ealing	515	London and Westminster	"

Beaver River near Kimberley

Location—At Hill's bridge, about 2 miles above Kimberley, on the south half of lot 2, concession 5, Township of Euphrasia, County of Grey.

Records Available—Discharge measurements at Weber's Bridge, September, 1914, to January, 1915. Discharge measurements April 25, 1915, to date, at Hill's Bridge. Daily gauge heights from April 25, 1915.

Drainage Area—100 square miles.

Gauge—Vertical staff 0 to 6 feet on tree on left bank 20 feet downstream from bridge. Zero of gauge is 0.00.

Channel and Control—Channel straight above and below for a distance of 200 feet. The banks and control are permanent under ordinary conditions. The bed is composed of stones and gravel, one channel existing at all stages.

Discharge Measurements—Made from the bridge during the high-water period, and from a permanent wading section located 20 feet above the bridge for the low-water stages.

Regulation—The Hydro-Electric Power Commission's power plant located three-quarters of a mile upstream, though a twenty-four hour power, has a marked effect on the river stage at this section.

Accuracy—The rating curve is fairly well defined, but open-water estimates are subject to errors, due to fluctuations in stage caused by operation of power plant.

Observer—A. Hill, Kimberley, P.O.

Discharge Measurements of Beaver River near Kimberley in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct 17....	Yeates, W.....	57	40	2.64	.99	106	.....
Nov. 9....	"	57	40	2.31	.97	93	.....
" 21....	"	57	37	2.19	.87	80	.....
Dec. 19....	"	57	70	1.59	1.53	112 (a)	.....
1918							
Jan. 16....	Roberts, E.	57	43	1.80	1.27	78 (a)	.....
Feb. 15....	Yeates, W.....	57	49	2.06	1.00	102	.....
Mar. 20....	Roberts, E.	57	125	3.20	2.37	400	.....
April 5....	"	41	143	4.58	2.98	650	.....
" 9....	"	61	139	3.48	2.56	482	.....
May 3....	"	57	72	2.63	1.48	188	.....
Aug. 30....	"	57	46	2.12	.94	102	.....
Sept. 11....	"	57	47	2.23	.95	105	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of Beaver River near Kimberley for 1917-8

Drainage Area, 100 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	0.96	95	0.96	95	1.00	86	2.29	150	1.50	101	1.21	120	2.62	499	1.54	198	0.96	95	0.87	82	0.83	76	0.79	70
2	0.87	81	0.96	95	0.92	74	2.54	160	1.75	94	1.21	120	2.37	411	1.46	182	0.92	89	0.92	89	0.83	76	0.79	70
3	1.08	115	0.96	95	1.00	86	2.50	190	0.75	49	1.12	104	2.42	428	1.42	175	0.92	89	0.92	89	0.83	76	0.83	76
4	0.96	95	0.75	64	0.87	66	2.37	165	1.21	88	1.04	92	3.08	695	1.33	158	0.92	89	0.83	76	0.71	58	0.87	87
5	1.08	115	1.00	101	0.96	65	2.17	165	1.67	113	0.96	80	3.00	660	1.08	115	0.92	89	0.87	82	0.79	70	1.29	150
6	0.96	95	0.96	95	1.08	83	1.50	101	1.92	121	1.12	104	2.92	625	0.92	89	0.83	96	0.83	76	0.96	95	1.04	108
7	0.79	70	0.87	81	1.25	64	1.96	128	1.25	64	1.08	98	2.83	585	0.92	89	0.83	96	0.75	64	0.83	76	0.96	95
8	0.79	70	0.87	81	1.79	70	1.00	71	1.29	70	1.04	92	2.79	570	0.92	89	0.79	70	0.67	52	0.92	89	0.71	58
9	0.87	81	0.96	95	1.62	46	0.83	47	0.83	47	1.04	92	2.50	454	1.00	101	0.71	58	0.87	82	0.92	89	0.92	89
10	0.87	81	0.96	95	2.46	145	0.83	47	0.62	46	0.92	74	2.12	337	1.04	108	0.79	70	0.92	89	0.92	89	0.92	89
11	0.92	89	0.67	52	2.39	133	0.83	47	0.75	64	1.33	106	1.92	285	1.12	121	0.87	82	0.87	82	0.83	76	0.92	89
12	0.96	95	0.87	81	2.37	130	0.87	52	0.79	70	1.08	98	1.54	198	1.12	121	1.00	101	0.79	70	0.87	82	0.96	95
13	1.17	130	0.87	81	2.25	109	1.29	70	0.83	75	1.12	104	1.46	182	1.54	198	0.96	95	0.83	76	0.87	82	1.04	108
14	0.79	70	0.92	89	2.21	120	1.67	81	0.87	81	1.12	104	1.33	158	1.37	165	0.96	95	0.62	46	1.00	101	0.96	95
15	0.96	95	1.00	101	2.17	130	1.92	89	0.96	95	1.08	98	1.50	190	1.25	144	0.87	82	0.75	64	0.87	82	0.79	70
16	0.92	89	1.00	101	1.67	81	1.12	52	1.33	106	1.21	120	1.42	175	1.33	158	0.67	52	0.92	89	0.87	82	1.00	101
17	0.92	89	0.92	89	1.96	128	0.87	52	1.08	83	1.04	92	1.50	190	1.21	137	0.79	70	0.87	82	0.83	76	0.96	95
18	1.04	108	0.67	52	2.00	135	1.08	53	1.17	96	1.21	120	1.67	225	1.12	121	0.87	82	0.92	89	0.67	52	0.92	89
19	1.21	137	0.96	95	1.54	116	1.50	86	1.08	83	1.46	111	1.54	198	1.29	150	0.83	76	0.92	89	0.79	70	0.83	76
20	1.04	108	0.96	95	0.96	65	0.87	52	1.67	113	2.08	115	1.50	190	1.25	144	0.87	82	0.79	70	0.92	89	0.87	82
21	0.79	70	0.87	81	1.00	71	1.12	89	1.87	113	2.25	126	1.33	158	1.21	137	1.08	115	0.71	58	0.87	82	0.96	95
22	0.96	95	1.00	101	1.00	71	0.87	52	1.83	106	2.37	130	1.21	137	1.25	144	0.96	95	0.75	64	0.92	89	0.75	64
23	0.92	89	0.92	89	0.79	42	0.87	52	1.54	108	2.17	130	1.54	198	1.08	115	0.83	76	0.92	89	0.92	89	0.92	89
24	0.92	89	1.08	98	0.87	52	0.96	65	1.00	86	2.00	190	1.62	214	0.92	89	0.79	70	0.87	82	0.92	89	0.96	95
25	0.96	95	1.00	94	0.92	59	0.83	47	1.21	103	1.96	223	1.58	206	1.04	108	0.92	89	0.92	89	0.71	58	0.96	95
26	0.96	95	1.04	100	1.08	83	1.21	73	1.67	130	1.71	212	1.58	206	0.92	89	0.87	82	0.79	70	0.92	89	0.96	95
27	0.96	95	1.50	101	0.96	65	1.25	79	1.42	121	1.54	198	1.54	198	1.04	108	0.92	89	0.83	76	0.96	95	0.87	82
28	0.83	75	1.37	96	1.04	77	1.75	94	1.33	123	1.54	198	1.33	158	1.08	115	0.83	76	0.79	70	0.87	82	0.83	76
29	0.87	81	0.83	60	1.58	115	1.54	62	.....	.....	1.58	206	1.42	175	1.04	108	0.87	82	0.92	89	0.87	82	0.67	52
30	0.96	95	0.96	80	1.08	83	2.42	138	.....	.....	1.79	253	1.54	198	1.04	108	0.87	82	0.92	89	0.96	95	0.83	76
31	0.96	95	.....	.....	2.50	152	1.42	89	.....	.....	1.83	263	.....	.....	0.96	95	.....	.....	0.96	95	1.00	101	.....	.....

Monthly Discharge of Beaver River at Kimberley for year ending September 30th, 1918

Drainage Area, 100 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile.			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area.
October (1917)	137	70	93	1.37	.70	.93	1.07
November "	101	52	88	1.01	.52	.88	.98
December "	152	42	90	1.52	.42	.90	1.04
January .. (1918)	190	47	87	1.90	.47	.87	1.00
February	130	46	91	1.30	.46	.91	.95
March	263	74	135	2.63	.74	1.35	1.56
April.....	695	137	303	6.95	1.37	3.03	3.38
May.....	198	89	128	1.98	.89	1.28	1.48
June.....	115	52	82	1.15	.52	.82	.91
July.....	95	46	78	.95	.46	.78	.90
August	101	52	82	1.01	.52	.82	.95
September.....	150	52	87	1.50	.52	.87	.97
The year.....	695	42	112	6.95	.42	1.12	15.20

Credit River at Cataract Junction

Location—About 500 feet from C.P.R. station at Cataract Junction, lot 14, concession 3, Township of Caledon, County of Peel.

Records Available—Discharge measurements from June, 1912. Daily gauge heights from May 7, 1915.

Drainage Area—85 square miles.

Gauge—Vertical staff 0 to 6 feet on tree on right bank. Zero of gauge (elevation 8.00) is referred to a B.M. (elevation 10.00) painted on rock 100 feet downstream from metering section.

Channel and Control—The channel is straight for about 350 feet above and 300 feet below the section. The right bank is low, and overflows during high stages. The bed is composed of gravel, which is shifting during flood stages.

Discharge Measurements—Made at permanent wading section at all stages.

Winter Flow—Relation of gauge height to discharge is affected by ice, and measurements are made to determine this flow.

Regulation—The dam at Erin, about four miles upstream, causes serious fluctuations in the river stage at this section. Semi-daily gauge readings will not give a representative mean.

Accuracy—A fairly well-defined rating curve has been established for this station. The accuracy of the estimates of discharge depends upon the accuracy of the mean daily gauge heights.

Observer—Alfred Riches, Cataract Junction.

Discharge Measurements of Credit River at Cataract Junction in 1917-18

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 19....	Yeates, W.....	40	29	1.45	8.71	42	.....
Nov. 8....	"	41	29	1.32	8.69	39	.....
Dec. 14....	Yeates, W.....	40	26	.96	9.27	25(a)	.....
1918							
Jan. 11....	Roberts, E.....	43	21	1.00	9.27	21	.....
April 6....	"	41	39	2.34	8.96	89(a)	.....

a Ice measurement

Daily Gauge Height and Discharge of Credit River at Cataract Junction for 1917-8

Drainage Area, 85 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	8.59	27	8.69	38	8.60	12	9.46	41	9.60	65	12.17	575	9.50	257	8.73	44	8.65	34	8.52	22	8.52	22	8.59	27
2	8.60	28	8.70	39	8.62	13	9.54	53	9.50	47	11.83	530	9.64	317	8.73	44	8.67	36	8.53	22	8.48	19	8.53	22
3	8.58	26	8.65	34	8.79	16	9.14	16	9.60	65	11.48	480	9.42	227	8.70	39	8.61	29	8.56	25	8.35	14	8.55	24
4	8.58	26	8.67	36	8.62	9	9.67	80	9.51	49	11.19	585	9.14	136	8.69	38	8.58	26	8.58	26	8.42	17	8.50	20
5	8.58	26	8.61	29	8.62	6	9.70	87	9.44	38	10.81	395	8.96	89	8.68	37	8.58	26	8.52	22	8.47	19	8.81	57
6	8.60	28	8.62	30	8.87	11	9.46	41	9.50	47	10.66	372	8.94	84	8.68	37	8.56	25	8.54	23	8.37	15	8.92	80
7	8.58	26	8.60	28	9.26	25	9.71	89	9.96	156	10.42	308	8.92	80	8.70	39	8.59	27	8.45	18	8.44	18	8.67	36
8	8.54	23	8.57	26	9.31	29	9.97	159	9.67	80	10.25	278	8.90	75	8.71	41	8.59	27	8.46	18	8.46	18	8.62	30
9	8.57	26	8.59	27	9.58	71	9.96	156	9.25	18	10.08	249	8.87	69	8.68	37	8.55	24	8.52	22	8.60	28	8.59	27
10	8.56	25	8.62	30	9.34	32	9.90	138	10.02	130	10.31	395	8.77	50	8.69	38	8.62	30	8.54	23	8.59	27	8.50	20
11	8.58	26	8.61	29	9.35	34	9.89	136	9.73	44	10.25	415	8.79	53	8.67	36	8.64	32	8.54	23	8.44	18	8.54	23
12	8.60	28	8.65	34	9.14	18	9.96	156	10.17	144	9.96	326	8.76	49	8.69	38	8.69	38	8.45	18	8.50	20	8.62	30
13	8.77	50	8.64	32	8.98	11	9.89	136	10.36	205	9.96	372	8.76	49	8.73	44	8.59	27	8.55	24	8.49	20	8.64	32
14	8.73	44	8.62	30	9.38	37	9.94	150	10.25	169	10.21	395	8.77	50	8.76	49	8.64	32	8.45	18	8.49	20	8.63	31
15	8.67	36	8.58	26	9.51	57	9.96	156	10.35	202	10.14	510	8.78	52	8.64	32	8.58	26	8.49	20	8.49	20	8.60	28
16	8.60	28	8.58	26	9.26	25	9.98	163	10.47	246	9.79	340	8.78	52	8.62	30	8.55	24	8.48	19	8.47	19	8.70	39
17	8.59	27	8.59	27	9.33	31	10.00	169	10.48	249	9.21	156	8.77	50	8.62	30	8.55	24	8.52	22	8.46	18	8.67	36
18	8.65	34	8.58	26	9.10	16	10.02	175	10.42	227	9.39	216	8.87	69	8.64	32	8.56	25	8.52	22	8.37	15	8.62	30
19	8.63	31	8.64	32	9.33	31	9.89	136	10.46	242	10.00	490	8.90	75	8.62	30	8.52	22	8.50	20	8.41	16	8.60	28
20	8.78	52	8.56	25	9.25	22	9.73	93	11.75	367	10.80	890	8.85	65	8.60	28	8.51	21	8.44	18	8.39	16	8.64	32
21	8.71	41	8.60	28	9.42	42	9.79	108	13.04	510	11.54	1260	8.81	57	8.67	36	8.53	22	8.43	17	8.45	18	8.64	32
22	8.63	31	8.68	26	9.35	34	9.59	63	13.50	740	11.27	1125	8.86	67	8.61	29	8.57	26	8.43	17	8.60	28	8.58	26
23	8.68	37	8.69	27	9.37	36	9.42	36	13.48	730	10.64	810	8.81	57	8.58	26	8.56	25	8.51	21	8.56	25	8.56	25
24	8.71	41	8.77	36	9.33	31	9.35	28	12.79	635	10.37	675	8.81	57	8.61	29	8.56	25	8.48	19	8.56	25	8.56	25
25	8.71	41	8.71	29	9.25	24	9.37	30	12.19	585	9.98	480	8.79	53	8.56	25	8.60	28	8.47	19	8.52	22	8.56	25
26	8.68	37	8.67	26	9.35	34	9.33	26	12.94	710	9.60	299	8.71	41	8.69	38	8.60	28	8.48	19	8.50	20	8.53	22
27	8.65	34	9.00	55	9.30	28	9.67	80	13.42	700	9.33	195	8.76	49	8.94	84	8.54	23	8.51	21	8.49	20	8.61	29
28	8.67	36	8.62	17	9.27	26	9.23	19	12.87	675	9.25	169	8.75	47	9.00	98	8.51	21	8.38	15	8.49	20	8.61	29
29	8.71	41	8.62	17	9.08	15	9.62	69	.....	.....	9.25	169	8.75	47	8.85	65	8.52	22	8.38	15	8.58	26	8.56	25
30	8.72	42	8.60	16	9.39	38	9.71	89	.....	.....	9.35	202	8.73	44	8.81	57	8.51	21	8.48	19	8.51	21	8.60	28
31	8.64	32	.....	.....	9.60	75	9.75	98	.....	.....	9.29	182	.....	.....	8.75	47	.....	.....	8.48	19	8.54	23	.....	....

Monthly Discharge of Credit River at Cataract Junction for year ending September 30th, 1918

Drainage Area, 85 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	52	23	33	.61	.27	.39	.45
November "	55	16	29	.65	.19	.34	.38
December "	75	6	29	.88	.07	.34	.39
January (1918)	175	16	96	2.06	.19	1.13	1.30
February	740	18	288	8.71	.21	3.39	3.53
March	1,260	156	450	14.87	1.84	5.29	6.10
April	317	41	82	3.73	.48	.96	1.07
May	98	25	41	1.15	.29	.48	.55
June	38	21	27	.45	.25	.32	.36
July	26	15	20	.31	.18	.24	.28
August	28	14	20	.33	.16	.24	.28
September	80	20	31	.94	.24	.36	.40
The year	1,260	6	95	14.87	.07	1.12	15.18

Rocky Saugeen River near Markdale

Location—At the Glen Cross highway bridge, three-quarters of a mile above Hayward's Falls, near lot 5, concession 8, Township of Glenelg, County of Grey.

Records Available—Discharge measurements and daily gauge heights from June 8, 1915.

Drainage Area—96 square miles.

Gauge—Vertical staff 0 to 6 feet on the downstream side of the centre pier of bridge. The zero of gauge (elevation 0.00) is referred to a B.M. (elevation 29.65) painted on a rock projecting from bank 40 feet north from first telephone pole on left bank.

Channel and Control—The channel is straight for 200 feet above and 500 feet below the station. The bed and banks are permanent, as flood conditions do not exist on this stream.

Discharge Measurements—Made at a permanent wading section. When the river is extremely high measurements will be made from the bridge.

Winter Flow—Ice has but little effect at this section and the open water curve is at all times applicable.

Regulation—The dam above has little effect on the river stage at this section.

Accuracy—The rating curve is well defined except for maximum flows.

Observer—Mrs. Elizabeth Jack, Markdale.

Discharge Measurements of Rocky Saugeen River near Markdale in 1917-18

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 17....	Yeates, W.....	75	87	1.05	1.52	91	.....
Nov. 9....	"	70	71	.94	1.33	66	.....
" 11....	"	69	68	.95	1.31	65	.....
" 22....	"	69	72	.97	1.35	70	.....
Dec. 20....	"	69	64	.93	1.25	60	.....
1918							
Jan. 17....	"	67	60	.88	1.17	53	.....
Feb. 16....	"	68	64	.95	1.25	61	.....
Mar. 20....	Roberts, E.	85	146	1.49	2.23	217	.....
" 28....	"	98	194	1.57	2.38	304	.....
April 5....	"	99	230	1.70	2.87	393	.....
" 9....	"	98	189	1.61	2.54	307	.....
May 2....	"	81	125	1.28	1.92	159	.....
July 6....	"	71	73	1.00	1.35	73	.....
" 9....	"	70	74	1.02	1.35	76	.....

Daily Gauge Height and Discharge of Rocky Saugeen River near Markdale for 1917-18

Drainage Area, 96 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1.33	68	1.42	79	1.42	79	1.25	60	1.50	56	2.00	173	2.92	406	1.83	142	1.67	115	1.67	115	1.25	60	1.25	60
2	1.33	68	1.42	79	1.42	79	1.25	60	1.50	56	2.00	173	3.50	580	1.83	142	1.58	101	1.67	115	1.00	45	1.17	54
3	1.42	79	1.42	79	1.42	79	1.25	60	1.42	58	2.00	173	3.50	580	1.83	142	1.58	101	1.50	89	1.12	50	1.25	60
4	1.42	79	1.42	79	1.42	79	1.25	60	1.33	55	2.00	173	3.33	530	1.83	142	1.58	101	1.33	68	1.00	45	1.25	60
5	1.42	79	1.42	79	1.42	79	1.25	60	1.33	59	2.00	173	3.00	430	1.83	142	1.58	101	1.25	60	1.00	45	1.58	101
6	1.42	79	1.42	79	1.42	79	1.25	60	1.25	60	2.00	173	3.00	430	1.83	142	1.50	89	1.25	60	1.25	60	1.42	79
7	1.42	79	1.33	68	1.42	79	1.17	54	1.25	60	1.92	159	2.75	355	1.83	142	1.50	89	1.25	60	1.33	68	1.33	68
8	1.42	79	1.33	68	1.42	79	1.17	54	1.25	60	1.92	159	2.75	355	1.83	142	1.50	89	1.25	60	1.25	60	1.33	68
9	1.42	79	1.33	68	1.42	79	1.17	54	1.25	60	1.92	159	2.50	285	1.83	142	1.50	89	1.33	68	1.25	60	1.29	64
10	1.42	79	1.33	68	1.42	79	1.17	54	1.25	60	1.92	159	2.50	285	1.83	142	1.50	89	1.33	68	1.25	60	1.25	60
11	1.33	68	1.33	68	1.42	79	1.25	60	1.25	60	1.92	159	2.33	242	1.83	142	1.50	89	1.33	68	1.25	60	1.33	68
12	1.33	68	1.25	60	1.42	79	1.25	60	1.25	60	2.00	173	2.33	242	1.83	142	1.83	142	1.33	68	1.33	68	1.58	101
13	1.42	79	1.25	60	1.42	79	1.17	54	1.25	60	2.00	173	2.33	242	1.83	142	1.67	115	1.33	68	1.12	50	1.50	89
14	1.42	79	1.25	60	1.33	68	1.17	54	1.25	60	2.00	173	2.33	242	1.83	142	1.58	101	1.25	60	1.50	89	1.33	68
15	1.42	79	1.25	60	1.33	68	1.17	54	1.25	60	2.00	173	2.25	224	1.83	142	1.50	89	1.33	68	1.33	68	1.33	68
16	1.42	79	1.25	60	1.33	68	1.17	54	1.25	60	2.00	173	2.25	224	1.83	142	1.50	89	1.25	60	1.21	57	1.50	89
17	1.42	79	1.25	60	1.33	68	1.08	48	1.25	60	2.00	173	2.25	224	1.83	142	1.50	89	1.33	68	1.21	57	1.33	68
18	1.42	79	1.25	60	1.25	60	1.08	48	1.25	60	2.00	173	2.25	224	1.83	142	1.50	89	1.33	68	1.21	57	1.29	64
19	1.42	79	1.25	60	1.25	60	1.08	48	1.25	60	2.00	173	2.25	224	2.00	173	1.50	89	1.25	60	1.17	54	1.42	79
20	1.42	79	1.25	60	1.25	60	1.08	48	2.00	173	2.17	207	2.25	224	2.17	207	1.58	101	1.25	60	1.17	54	1.33	68
21	1.50	89	1.25	60	1.25	60	1.08	48	2.00	173	2.33	242	2.17	207	1.92	159	1.75	128	1.25	60	1.17	54	1.50	89
22	1.50	89	1.25	60	1.25	60	1.08	48	2.00	173	3.00	430	2.17	207	1.75	128	1.75	128	1.33	68	1.17	54	1.25	60
23	1.50	89	1.33	68	1.25	60	1.08	48	2.00	173	3.00	430	2.17	207	1.75	128	1.67	115	1.25	60	1.25	60	1.25	60
24	1.42	79	1.33	68	1.25	60	1.08	48	2.00	173	3.00	430	2.17	207	1.75	128	1.67	115	1.17	54	1.25	60	1.25	60
25	1.42	79	1.33	68	1.33	68	1.08	48	2.00	173	3.00	430	2.08	188	1.75	128	1.50	89	1.25	60	1.25	60	1.17	54
26	1.42	79	1.33	68	1.33	68	1.08	48	2.00	173	2.83	379	2.08	188	1.75	128	1.50	89	1.25	60	1.17	54	1.25	60
27	1.42	79	1.33	68	1.33	68	1.17	54	2.00	173	2.75	355	2.00	173	1.75	128	1.50	89	1.17	54	1.17	54	1.25	60
28	1.42	79	1.33	68	1.33	68	1.17	50	2.00	173	2.58	307	2.00	173	1.75	128	1.50	89	1.04	47	1.25	60	1.17	54
29	1.50	89	1.33	68	1.33	68	1.25	56	.....	.....	2.75	355	1.92	159	1.67	115	1.50	89	1.08	48	1.17	54	1.25	60
30	1.50	89	1.33	68	1.33	68	1.42	67	.....	.....	2.92	406	1.92	159	1.67	115	1.50	89	1.12	50	1.17	54	1.33	68
31	1.50	89	.....	.....	1.33	68	1.42	54	.....	.....	2.92	406	.....	.....	1.67	115	.....	....	1.08	48	1.25	60	.....	.....

Monthly Discharge of Rocky Saugeen River at Markdale for year ending September 30th, 1918

Drainage Area, 96 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	89	68	79	.93	.71	.82	.95
November "	79	60	67	.82	.62	.70	.78
December "	79	60	71	.82	.62	.74	.85
January (1918)	67	48	54	.70	.50	.56	.65
February	173	55	96	1.80	.57	1.00	1.04
March	430	159	245	4.48	1.66	2.55	2.94
April	580	159	281	6.04	1.66	2.93	3.27
May	207	115	140	2.16	1.20	1.46	1.68
June	142	89	99	1.48	.93	1.03	1.15
July	115	47	65	1.20	.49	.68	.78
August	89	45	58	.93	.47	.60	.69
September	101	54	69	1.05	.56	.72	.80
The year	580	45	110	6.04	.47	1.15	15.56

Saugeen River near Port Elgin

Location—At the highway bridge known as McCalder's Bridge, 4 miles north-east of the Town of Port Elgin, near lot 5, concession 12, Township of Saugeen, County of Bruce.

Records Available—Discharge measurements from July, 1911. Daily gauge heights from April 19, 1914.

Drainage Area—1,565 square miles.

Gauge—Vertical staff 0 to 12 feet on left abutment downstream side. Zero of gauge (elevation 4.00) is referred to a B.M. (elevation 25.00) painted on wooden hand-rail of bridge.

Channel and Control—The channel is straight for about 350 feet above and below the section. The bed of the stream, with two submerged piers at the section, is composed of fairly large boulders, which will only shift during high flood stages. The current is moderate and flows through two channels, which are separated by the centre pier of the bridge.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—Ice greatly affects relation of gauge height to discharge. Measurements are made during the winter to determine the flow.

Regulation—Fluctuations occur in the river stage at this section. This is no doubt caused by the plants at Walkerton, Chesley and Paisley.

Accuracy—Semi-daily reading should give a fair representative mean. The fluctuations that have been noted are not large, consequently the gauge height records can be classified as good. A well-defined curve is shown for flows up to 20,000 sec. feet. A slight angle in cross-section No. 1, may affect accuracy of meter measurements.

Observer—John Shanks, Southampton.

Discharge Measurements of Saugeen River near Port Elgin in 1917-18

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 16....	Yeates, W.....	192	809	1.10	5.54	890	.....
Nov. 10....	"	192	795	1.10	5.49	873	.....
1918							
Jan. 10....	Roberts, E..	187	601	.81	5.67	486(a)	.....
Mar. 22....	"	221	2,597	6.23	13.96	16,284	.....
" 23....	"	221	2,664	6.50	14.30	17.299	.....
" 24....	"	221	2,511	6.06	13.60	15,228	.....
" 25....	"	221	2,443	5.82	13.29	14,198	.....
" 25....	"	221	2,443	5.77	13.29	14,098	.....
" 26....	"	221	2,268	5.37	12.63	12,178	.....
April 2....	"	221	2,477	6.00	13.50	14,818	.....
" 3....	"	221	2,376	5.59	13.00	13,309	.....
May 2....	"	197	1,000	1.86	6.58	1,856	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of Saugeen River near Port Elgin for 1917-8

Drainage Area, 1,565 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	5.21	695	5.77	1100	7.00	1280	6.00	690	5.71	496	9.96	2160	12.90	12930	6.69	1890	6.12	1380	5.17	670	4.75	400	4.75	400
2	5.33	780	5.81	1130	6.92	1300	5.92	635	5.73	510	9.27	2070	13.54	14950	6.67	1870	6.08	1340	5.50	900	4.75	400	4.75	400
3	5.33	780	5.89	1190	6.81	1290	5.89	615	5.71	496	9.00	2000	13.46	14690	6.62	1820	6.00	1280	5.42	845	4.75	400	4.75	400
4	5.33	780	6.04	1310	6.31	1050	5.83	570	5.71	496	8.87	2070	12.92	12990	6.56	1760	5.92	1220	5.37	810	4.75	400	4.75	400
5	5.42	845	5.83	1140	5.89	895	5.75	520	5.75	520	8.56	2260	11.04	8290	6.46	1670	5.87	1180	5.29	755	4.58	298	5.08	605
6	5.39	825	5.73	1060	5.77	880	5.62	442	5.75	520	8.19	2390	9.87	6060	6.42	1640	5.67	1020	5.17	670	4.71	376	5.54	930
7	5.33	780	5.67	1020	5.67	880	5.58	418	5.71	496	7.83	2280	9.08	4770	6.33	1560	5.62	985	5.02	565	4.75	400	5.71	1050
8	5.33	780	5.58	955	5.60	900	5.58	418	5.64	454	7.58	2280	8.58	4060	6.21	1450	5.54	930	4.96	525	4.75	400	5.62	985
9	5.27	740	5.50	900	5.54	860	5.56	406	5.83	570	7.48	2430	8.00	3320	6.06	1330	5.46	870	5.04	580	4.75	400	5.37	810
10	5.31	765	5.42	845	5.42	845	5.67	472	6.04	729	7.42	2640	7.79	3070	6.17	1420	5.42	845	5.25	725	4.75	400	5.12	635
11	5.33	780	5.39	825	5.71	905	5.67	472	5.92	635	7.46	2690	7.56	2800	6.33	1560	5.33	780	5.17	670	4.75	400	5.08	605
12	5.33	780	5.37	810	5.96	940	5.58	418	5.85	585	8.17	3520	7.31	2520	6.44	1660	5.42	845	5.12	635	4.75	400	5.10	620
13	5.33	780	5.42	845	6.42	1060	5.58	418	5.67	472	9.12	4830	7.17	2370	6.79	1990	6.00	1280	5.10	620	4.75	400	5.25	725
14	5.33	780	5.37	810	6.42	1060	5.62	442	5.64	454	9.75	5840	7.00	2200	7.33	2540	5.87	1180	5.00	550	4.75	400	5.46	870
15	5.35	795	5.35	795	6.42	1060	5.67	472	6.71	905	9.85	6020	7.00	2200	7.04	2240	5.67	1020	4.87	472	4.75	400	5.87	1180
16	5.31	765	5.33	780	6.42	1060	5.67	472	7.29	1110	9.92	6150	6.92	2120	6.54	1750	5.50	900	4.83	448	4.75	400	5.75	1080
17	5.31	765	5.31	765	6.35	1080	5.69	484	7.37	1100	10.14	6540	6.83	2030	6.33	1560	5.48	885	4.87	472	4.75	400	5.75	1080
18	5.29	755	5.29	755	6.27	1100	5.69	484	7.60	1200	10.52	7250	7.39	2610	6.25	1480	5.48	885	4.87	472	4.75	400	5.71	1050
19	5.31	765	5.31	765	6.25	1160	5.71	496	7.71	1210	10.83	7860	7.75	3020	6.17	1420	5.33	780	4.83	448	4.75	400	5.67	1020
20	5.44	860	5.39	825	6.67	1260	5.69	484	10.44	2140	12.92	12990	7.58	2820	6.42	1640	5.00	550	4.83	448	4.71	376	5.58	955
21	6.29	1520	5.42	775	7.37	1180	5.71	496	11.02	2220	12.46	11660	7.42	2640	6.42	1640	5.12	635	4.83	448	4.75	400	5.46	870
22	6.29	1520	5.48	745	7.19	1110	5.69	484	10.75	2150	13.70	13760	7.42	2640	6.21	1450	5.21	695	4.83	448	4.75	400	5.39	825
23	6.08	1340	5.50	690	7.00	1120	5.64	454	10.37	2070	14.29	17700	7.33	2540	6.00	1280	5.17	670	4.75	400	4.75	400	5.35	795
24	5.92	1220	5.60	690	7.00	1120	5.67	472	9.98	2180	13.62	15220	7.31	2520	5.96	1250	5.08	605	4.71	376	4.75	400	5.33	780
25	5.81	1130	5.79	755	6.85	1160	5.71	496	9.75	2460	13.12	13600	7.17	2370	5.83	1140	5.08	605	4.67	352	4.75	400	5.29	755
26	5.67	1020	6.00	830	6.56	1090	5.73	510	9.73	2430	12.67	12250	7.00	2200	5.87	1180	5.00	550	4.54	274	4.75	400	5.25	725
27	5.67	1020	5.94	860	6.48	1030	5.69	484	12.21	2410	11.29	8830	6.83	2030	6.21	1450	5.00	550	4.50	250	4.75	400	5.23	710
28	5.67	1020	5.83	850	6.42	985	5.71	496	11.54	2240	10.75	7700	6.67	1870	6.25	1480	5.00	550	4.42	202	4.75	400	5.19	685
29	5.67	1020	5.83	850	6.25	865	5.75	520	.....	.....	10.75	7700	6.52	1730	6.17	1420	4.92	500	4.42	202	4.75	400	5.17	670
30	5.73	1060	6.42	1060	6.17	810	5.71	496	.....	.....	10.83	7860	6.62	1820	6.17	1420	4.87	472	4.71	376	4.75	400	5.08	605
31	5.75	1080	....	....	6.12	775	5.73	510	.....	.....	10.58	7360	.....	....,	6.17	1420	.....	....	4.75	400	4.79	424	.....	....

Monthly Discharge of Saugeen River near Port Elgin for year ending September 30th, 1918

Drainage Area, 1,565 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	1,520	695	921	.97	.44	.59	.68
November "	1,310	690	891	.84	.44	.57	.64
December "	1,300	775	1,036	.83	.50	.66	.76
January (1918)	690	406	492	.44	.26	.31	.36
February	2,460	454	1,187	1.57	.29	.76	.79
March.....	17,700	2,000	6,771	11.31	1.28	4.33	4.99
April.....	14,950	1.730	4,406	9.55	1.11	2.82	3.15
May	2,540	1,140	1,593	1.62	.73	1.02	1.18
June	1,380	472	866	.88	.30	.55	.61
July.....	900	202	516	.58	.13	.33	.38
August	424	298	396	.27	.19	.25	.29
September.....	1,180	400	774	.75	.26	.49	.55
The year	17,700	202	1,657	11.31	.13	1.06	14.38

Saugeen River near Walkerton

Location—At the south line bridge, 3½ miles above the Town of Walkerton, near lot 39, concession 2, Township of Brant, County of Bruce.

Records Available—Discharge measurements from June, 1912. Daily gauge heights from March 26, 1914.

Drainage Area—850 square miles.

Gauge—Vertical staff 2 to 12 feet on right abutment. Zero of the gauge is 14.00 feet, which is referred to a B.M. (elevation 35.00) on tension rod of bridge.

Channel and Control—Channel is straight for about 500 feet above and below the section. Both banks are high, and do not overflow. The river bed is composed of clay, one channel existing at all stages.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—Ice greatly affects relation of gauge height to discharge. Measurements are made to determine the winter flow.

Regulation—The dam at Walkerton, about 3½ miles downstream, has no effect on the river stage at this section.

Accuracy—Weeds below this section in previous years had a deterrent effect on the velocity. The freshet of last spring, which was attended by such heavy ice, cleared the majority of this growth away and the records since then can be classed as good.

Observer—James Preston, Walkerton.

Discharge Measurements of Saugeen River near Walkerton in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 18....	Yeates, W.	113	483	.82	15.45	396	.....
Nov. 10....	"	114	483	.92	15.52	444	.....
Dec. 12....	"	118	463	.94	16.17	434 (a)	.....
1918							
Jan. 9....	Roberts, E.....	117	389	.62	15.79	240 (a)	.....
Feb. 18....	Yeates, W.	110	525	1.62	17.42	850 (a)	.....
Mar. 22....	Roberts, E	135	1,576	5.03	23.83	7,925	.....
" 24....	"	135	1,535	4.80	23.46	7,363	.....
" 24....	"	135	1,508	4.70	23.27	7,095	.....
" 25....	"	135	1,481	4.63	23.08	6,851	.....
" 26....	"	135	1,292	4.21	21.75	5,433	.....
" 27....	"	135	1,184	3.82	20.92	4,519	.....
April 3....	"	135	1,508	4.85	23.35	7,319	.....
" 4....	"	135	1,333	4.25	22.00	5,671	.....
May 2....	"	127	626	1.59	16.71	995	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of Saugeen River near Walkerton for 1917-8

Drainage Area, 850 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	15.54	406	16.00	620	15.71	274	15.85	270	16.00	270	21.08	1700	23.46	7420	16.79	1020	16.37	805	15.42	358	14.83	129	14.96	174
2	15.56	414	16.04	640	15.83	322	15.71	214	15.96	254	20.75	1640	24.42	8710	16.75	995	16.08	660	15.44	366	14.87	141	15.12	238
3	15.50	390	15.94	590	15.79	306	15.71	214	15.92	238	20.50	1640	23.50	7470	16.62	930	15.92	580	15.46	374	14.87	141	15.12	238
4	15.58	422	15.77	505	15.62	238	15.79	246	15.71	154	20.17	1590	22.83	6650	16.54	890	15.75	495	15.37	338	14.83	129	15.12	238
5	15.64	446	15.81	525	15.64	246	15.79	246	15.75	170	20.00	1640	20.33	3870	16.46	850	15.67	458	15.25	290	14.87	141	15.37	338
6	15.54	406	15.71	475	15.46	154	15.75	230	16.12	278	19.50	1470	19.54	3110	16.37	805	15.62	438	15.21	274	14.92	158	16.04	640
7	15.42	358	15.64	446	15.42	141	15.50	135	15.96	214	19.37	1550	18.87	2500	16.21	725	15.64	446	15.23	282	14.87	141	15.67	458
8	15.46	374	15.62	438	15.92	338	15.77	238	15.96	214	19.00	1470	18.71	2360	15.98	610	15.56	414	15.27	298	14.94	166	15.33	322
9	15.37	338	15.54	406	15.89	326	15.79	226	16.04	246	18.79	1500	18.33	2050	16.00	620	15.46	374	15.25	290	15.00	190	15.33	322
10	15.33	322	15.46	374	15.83	302	15.89	266	16.04	246	18.29	1320	17.83	1700	16.35	795	15.58	422	15.25	290	14.94	166	15.37	338
11	15.25	290	15.37	338	16.29	490	16.12	358	15.87	178	18.08	1040	17.46	1440	16.42	830	15.71	475	15.29	306	14.92	158	15.08	222
12	15.42	358	15.48	382	16.12	398	16.04	326	16.37	378	18.29	890	17.33	1350	16.62	930	15.73	485	15.29	306	15.00	190	15.54	406
13	15.42	358	15.58	422	16.14	406	15.79	226	16.62	480	19.12	1200	17.17	1240	17.33	1350	15.92	580	15.25	290	14.87	141	16.00	620
14	15.71	475	15.37	338	16.08	382	15.87	258	16.77	555	19.50	1820	17.12	1200	17.46	1440	15.81	525	15.08	222	15.19	266	16.33	785
15	15.73	485	15.46	374	16.04	366	16.08	342	17.42	880	19.29	2020	17.08	1180	17.04	1150	15.67	458	15.12	238	15.46	374	16.17	705
16	15.58	422	15.35	330	15.87	298	16.06	334	17.62	980	19.04	2220	17.17	1240	16.75	995	15.46	374	15.42	358	15.21	274	16.29	765
17	15.50	390	15.29	306	15.71	234	16.10	350	17.48	910	18.92	2550	17.21	1270	16.46	850	15.52	398	15.04	206	15.12	238	16.17	705
18	15.44	366	15.37	338	15.75	250	16.12	358	17.37	805	19.37	2950	17.62	1550	16.21	725	15.44	364	15.12	238	14.83	129	15.92	580
19	15.64	446	15.35	330	15.87	298	16.04	326	17.58	910	20.33	3870	17.75	1640	15.98	610	15.25	290	15.04	206	14.83	129	15.79	515
20	16.08	660	15.50	390	15.62	198	15.96	294	20.33	1350	22.00	5650	17.62	1550	16.71	975	15.29	306	14.96	174	14.96	174	15.71	475
21	16.37	805	15.46	334	16.00	350	15.81	234	19.29	1320	23.33	7250	17.37	1380	16.39	815	15.79	515	14.79	117	14.98	182	15.58	422
22	16.29	765	15.71	414	16.08	382	16.04	326	18.79	1150	24.29	8530	17.46	1440	16.21	725	16.04	640	14.87	141	14.89	147	15.42	358
23	16.04	640	15.71	394	15.87	298	16.12	318	18.54	1020	24.08	8230	17.35	1360	16.08	660	15.75	495	15.00	190	14.89	147	15.37	338
24	15.92	580	15.58	322	15.89	306	16.10	310	18.67	1080	23.50	7470	17.21	1270	16.00	620	15.67	458	14.67	81	14.92	158	15.46	374
25	15.79	515	15.42	239	15.83	282	16.12	318	19.21	1270	23.08	6950	17.12	1200	15.98	610	15.67	458	14.96	174	14.87	141	15.33	322
26	15.73	485	15.37	198	15.85	290	16.04	286	21.83	1700	22.00	5650	16.96	1110	16.21	725	15.56	414	15.04	206	15.00	190	15.37	338
27	15.62	438	15.77	338	15.81	274	16.04	286	21.62	1730	20.79	4330	16.75	995	16.42	830	15.37	338	15.00	190	14.96	174	15.37	338
28	15.77	505	15.46	194	15.75	230	15.79	186	21.37	1730	20.21	3750	16.58	910	16.44	840	15.37	338	15.00	190	14.81	123	15.33	322
29	15.77	505	15.42	178	15.75	230	16.06	294	.....	.....	20.08	3620	16.71	975	16.37	805	15.35	330	14.83	129	14.92	158	15.17	258
30	15.92	580	15.46	194	15.87	278	16.17	338	.....	.....	20.71	4250	16.79	1020	16.33	785	15.33	322	14.83	129	14.96	174	15.33	322
31	16.04	640	.....	.....	15.58	162	16.06	294	.....	.....	21.33	4900	.....	.....	16.25	745	.....	.....	14.96	174	14.87	141	.....	....

Monthly Discharge of Saugeen River at Walkerton for year ending September 30th, 1918

Drainage Area, 850 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October .. (1917)	805	290	470	.95	.34	.55	.63
November "	640	178	379	.75	.21	.45	.50
December "	490	141	292	.58	.17	.34	.39
January .. (1918)	358	135	279	.42	.16	.33	.38
February	1,730	154	740	2.04	.18	.87	.91
March	8,530	890	3,376	10.04	1.05	3.97	4.58
April	8,710	910	2,372	10.25	1.07	2.79	3.11
May.....	1,440	610	847	1.69	.72	1.00	1.15
June.....	805	290	455	.95	.34	.54	.60
July.....	374	81	240	.44	.10	.28	.32
August	374	123	171	.44	.14	.20	.23
September.....	785	174	416	.92	.20	.49	.55
The year	8,710	81	836	10.25	.10	.98	13.36

Sydenham River near Owen Sound

Location—At the highway bridge above the Town of Owen Sound's filtration plant, near lot 9, concession 1, Township of Derby, County of Grey.

Records Available—Discharge measurements and daily gauge heights from June 9, 1915.

Drainage Area—71 square miles.

Gauge—Vertical staff 0 to 6 feet on upstream side of first pier from right abutment. Zero on the gauge is 0.00.

Channel and Control—The channel is straight for 200 feet above and below the section. both banks are low, but do not overflow, the stream never assuming flood proportions. The bed is composed of solid rock, with two channels during the low-water period. During the high-water stages all the water is confined between the two abutments of the bridge.

Discharge Measurements—Made from the bridge during the high-water period, and from a permanent wading section located 30 feet upstream during the low stages.

Winter Flow—Ice has little effect.

Regulation—The Town of Owen Sound has a dam 300 feet above this section that is used to supply water for domestic uses.

Diversions—An additional 750,000 gallons of water per day should be added to the daily flow at this section, which is the approximate amount diverted.

Accuracy—There are not sufficient readings to define a curve at all stages. Discharges between gauge heights .90 and 1.40 are fair.

Observer—Myrtle Cook, Ashley P.O.

Discharge Measurements of Sydenham River near Owen Sound in 1917-8

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 17....	Yeates, W....	45	26	1.28	1.10	33	.....
Nov. 10....	"	49	29	1.24	1.10	37	.....
" 22....	"	51	36	1.69	1.27	61	.....
Dec. 20....	"	58	34	1.37	1.39	47 (a)	.....
1918							
Jan. 18....	"	57	19	.98	1.54	19 (a)	.....
Feb. 14....	"	44	25	1.21	1.75	30 (a)	.....
Mar. 22....	Roberts, E....	64	181	4.67	3.00	846	.....
" 27....	"	68	110	3.86	2.21	427	.....
" 27....	"	64	136	3.21	2.25	448	.....
Apr. 4....	"	68	112	3.97	2.25	447	.....
" 10....	"	65	74	2.83	1.83	211	.....
May 3....	"	63	52	2.05	1.50	107	.....
July 7....	"	47	21	1.00	.96	23	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of Sydenham River near Owen Sound for 1917-8

Drainage Area, 71 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1.04	30	1.21	51	1.33	53	1.00	10	1.46	44	3.67	152	2.58	675	1.54	115	1.21	50	1.17	45	.87	15	.96	22
2	1.04	30	1.21	51	1.33	53	1.33	20	1.46	44	3.50	162	2.75	790	1.50	105	1.21	50	1.12	39	.87	15	.87	15
3	1.04	30	1.17	45	1.37	59	1.54	41	1.42	39	3.17	188	2.54	645	1.50	105	1.17	45	1.04	30	.92	19	.83	12
4	1.08	34	1.17	45	1.37	59	1.83	70	1.37	23	2.92	152	2.33	505	1.46	96	1.17	45	0.96	22	.92	19	.83	12
5	1.08	34	1.17	45	1.29	48	2.00	105	1.25	14	2.75	180	2.17	401	1.42	87	1.17	45	.92	19	.87	15	.87	15
6	1.12	39	1.12	39	1.25	42	2.25	146	1.25	8	2.71	166	2.08	343	1.42	87	1.17	45	.92	19	.87	15	1.00	26
7	1.12	39	1.12	39	1.21	37	2.25	146	1.21	6	2.58	192	1.92	255	1.42	87	1.17	45	.92	19	.87	15	.92	19
8	1.12	39	1.12	39	1.21	37	2.25	146	1.17	3	2.50	199	1.92	255	1.37	77	1.12	39	.96	22	.87	15	.92	19
9	1.08	34	1.12	39	1.37	45	2.17	123	1.17	3	2.46	226	1.87	231	1.37	77	1.17	45	1.00	26	.87	15	.87	15
10	1.08	34	1.12	39	1.75	57	2.12	110	1.25	5	2.46	276	1.83	213	1.42	87	1.17	45	1.04	30	.87	15	.87	15
11	1.04	30	1.08	34	1.50	49	2.12	110	1.54	21	2.37	281	1.83	213	1.42	87	1.08	34	1.00	26	.87	15	.87	15
12	1.08	34	1.08	34	1.29	35	2.08	101	1.92	68	2.33	314	1.79	195	1.50	105	1.25	56	1.00	26	.87	15	.96	22
13	1.08	34	1.08	34	1.33	40	2.17	123	1.92	68	2.25	326	1.75	180	1.54	115	1.33	70	1.00	26	.87	15	.96	22
14	1.12	39	1.08	34	1.33	40	2.17	123	1.83	40	2.17	286	1.75	180	1.54	115	1.21	50	0.96	22	.87	15	.96	22
15	1.12	39	1.08	34	1.33	40	2.25	146	2.12	68	2.17	286	1.71	166	1.58	125	1.17	45	.92	19	.92	19	.96	22
16	1.12	39	1.08	34	1.37	45	2.33	173	2.54	143	2.12	255	1.67	152	1.50	105	1.12	39	.96	22	.92	19	.96	22
17	1.08	34	1.08	34	1.37	45	2.42	208	2.50	105	2.08	286	1.58	125	1.42	87	1.08	34	1.00	26	.87	15	.96	22
18	1.12	39	1.08	34	1.46	58	2.50	244	2.42	87	2.04	265	1.62	136	1.37	77	1.08	34	.96	22	.87	15	.92	19
19	1.17	45	1.08	34	1.50	64	2.46	226	2.58	101	2.00	297	1.67	152	1.33	70	1.04	30	.92	19	.87	15	.92	19
20	1.17	45	1.08	34	1.50	64	2.46	226	2.83	125	2.58	343	1.67	152	1.33	70	1.04	30	.92	19	.87	15	.96	22
21	1.25	57	1.12	39	1.42	52	2.46	226	2.67	123	3.42	255	1.71	166	1.33	70	1.04	30	.92	19	.87	15	.96	22
22	1.25	57	1.25	57	1.46	58	2.42	208	2.62	136	3.00	820	1.75	180	1.29	62	1.08	34	.92	19	.87	15	.96	22
23	1.25	57	1.33	61	1.42	52	2.33	173	2.58	125	2.75	790	1.67	152	1.29	62	1.08	34	.92	19	.92	19	.92	19
24	1.21	51	1.37	68	1.42	52	2.33	173	2.71	133	2.67	735	1.58	125	1.25	56	1.08	34	.92	19	.92	19	.92	19
25	1.21	51	1.42	77	1.42	52	2.29	159	2.75	117	2.50	620	1.54	115	1.25	56	1.04	30	.92	19	.92	19	.92	19
26	1.21	51	1.42	77	1.42	52	2.25	180	2.92	152	2.33	505	1.54	115	1.29	62	1.04	30	.92	19	.83	12	.87	15
27	1.17	45	1.37	68	1.50	49	2.00	130	3.08	156	2.25	453	1.54	115	1.33	70	1.00	26	.92	19	.83	12	.92	19
28	1.17	45	1.33	61	1.62	52	1.67	59	3.54	177	2.17	401	1.50	105	1.29	62	1.00	26	.92	19	.83	12	.92	19
29	1.17	45	1.33	61	1.67	52	1.37	33	.....	.....	2.21	427	1.50	105	1.25	56	1.00	26	.92	19	.87	15	.92	19
30	1.21	51	1.33	61	1.87	77	1.42	39	.....	.....	2.33	505	1.50	105	1.21	50	1.04	30	.92	19	.92	19	.92	19
31	1.21	51	.....	.....	1.50	49	1.42	39	.....	.....	2.42	565	.....	.....	1.21	50	.....	...	.92	19	.92	19	.....	....

Monthly Discharge of Sydenham River at Owen Sound for year ending September 30th, 1918

Drainage Area, 71 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October. ..(1917)	57	30	41	.80	.42	.58	.67
November "	77	34	47	1.08	.48	.66	.74
December "	77	35	51	1.08	.49	.72	.83
January .. (1918)	244	10	130	3.44	.14	1.83	2.11
February	177	3	76	2.49	.04	1.07	1.11
March	820	152	352	11.55	2.14	4.96	5.72
April.....	790	105	242	11.13	1.48	3.41	3.80
May	125	50	82	1.76	.70	1.15	1.33
June.....	70	26	39	.99	.37	.55	.61
July	45	19	23	.63	.27	.32	.37
August	19	12	16	.27	.17	.23	.27
September	26	12	19	.37	.17	.27	.30
The year	820	3	93	11.55	.04	1.31	17.78

Thames River (Main Stream) at Kilworth

Location—At the highway bridge known as Kilworth Bridge, 2 miles north-west of the Town of Byron, near the Village of Komoka, Township of Delaware, County of Middlesex.

Records Available—Monthly discharge measurements from March, 1912. Daily gauge heights from March 13, 1914.

Drainage Area—1,270 square miles.

Gauge—Vertical staff 0 to 12 feet on centre pier. The zero of gauge (elevation 6.00), which has remained unchanged since established, is referred to a B.M. (elevation 31.21) on downstream side of right abutment.

Channel and Control—The channel is straight above and below section for about 600 feet. The banks are high, and do not overflow or shift to a great extent. The control, however, is not stationary under high-water conditions. The velocity is high.

Discharge Measurements—Made from bridge at all stages.

Winter Flow—Ice is present during the winter period, and measurements are made to determine the winter flow.

Accuracy—During flood stages the high velocity necessitates the taking of surface readings. The station rating curve is fairly well defined for ordinary flows. Exceptional conditions existed in the spring of 1918, making the accuracy of estimates during the freshet of that year very problematical.

Observer—James Bourne, Komoka.

Discharge Measurements of Thames River at Kilworth in 1917-18

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 24....	Yeates, W	201	290	2.04	6.89	590	.....
Nov. 5....	"	202	300	2.34	6.96	703	.....
1918							
Jan. 29....	Yeates, W.....	145	111	.84	6.37	92	.....
Mar. 16....	Roberts, E.....	242	1,209	5.54	10.89	6,683	.....
April 7....	"	210	381	2.96	7.33	1,124	.....

Daily Gauge Height and Discharge of Thames River at Kilworth for 1917-18

Drainage Area, 1,270 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	6.50	225	7.42	1230	6.75	475	7.83	780	8.58	835	16.75	4480	8.33	2340	7.08	835	7.08	835	6.42	145	6.37	95	6.25	12
2	6.54	265	7.21	975	6.83	560	7.71	645	6.87	295	12.21	3590	9.87	4690	7.00	745	6.92	655	6.46	185	6.33	55	6.33	55
3	6.67	395	7.04	790	6.75	475	7.87	820	6.58	20	10.21	3590	9.25	3660	7.00	745	6.92	655	6.58	305	6.33	55	6.37	95
4	6.50	225	7.00	745	6.75	475	8.00	965	8.58	1660	9.67	3160	8.42	2460	6.92	655	6.79	515	6.54	265	6.33	55	6.33	55
5	6.33	55	6.92	655	6.79	465	8.00	965	8.33	1120	9.87	3380	7.75	1620	6.87	600	6.75	475	6.50	225	6.33	55	6.71	435
6	6.54	265	6.92	655	6.71	385	7.67	600	8.25	1020	10.21	3590	7.50	1320	6.83	560	6.75	475	6.50	225	6.25	12	6.71	435
7	6.46	185	6.87	600	6.71	385	7.92	875	8.12	875	9.83	3320	7.33	1120	6.83	560	6.75	475	6.46	185	6.25	12	6.75	475
8	6.50	225	6.83	560	6.96	590	7.92	875	8.21	975	9.21	3440	7.25	1020	6.83	560	6.71	435	6.42	145	6.25	12	6.67	395
9	6.37	95	6.79	515	7.33	890	7.96	920	8.25	1020	9.17	3530	7.17	930	6.83	560	6.67	395	6.42	145	6.25	12	6.58	305
10	6.50	225	6.75	475	7.42	875	8.04	1010	8.17	930	9.33	3780	7.00	945	6.83	560	6.54	265	6.42	145	6.25	12	6.46	185
11	6.50	225	6.75	475	7.50	855	8.00	965	8.37	1170	11.79	8550	7.00	945	6.83	560	6.62	345	6.46	185	6.25	12	6.42	145
12	6.58	305	6.75	475	7.33	560	7.92	875	9.00	1320	9.42	3930	6.96	700	6.83	560	6.75	475	6.42	145	6.42	145	6.58	305
13	6.67	395	6.67	395	7.37	600	7.79	735	10.37	1770	12.04	9140	7.00	745	6.87	600	6.79	515	6.42	145	6.42	145	6.71	435
14	6.71	435	6.67	395	7.50	745	8.03	1060	11.46	2510	13.71	13620	6.96	700	6.92	655	6.75	475	6.42	145	6.33	55	7.08	835
15	6.71	435	6.67	395	7.42	655	7.92	875	15.37	3080	12.54	10370	6.92	655	6.92	655	6.58	305	6.42	145	6.29	22	7.00	745
16	6.71	435	6.67	395	7.37	600	8.00	965	11.71	2860	11.17	7220	6.87	600	6.87	600	6.58	305	6.42	145	6.25	12	6.96	700
17	6.58	305	6.62	345	7.42	655	7.92	875	14.33	3030	10.42	5690	6.92	655	6.75	475	6.50	225	6.42	145	6.25	12	7.08	835
18	6.58	305	6.58	305	7.08	305	7.92	875	16.83	2340	12.25	9640	7.42	1230	6.75	475	6.50	225	6.42	145	6.25	12	7.00	745
19	6.83	560	6.58	305	7.17	395	7.79	735	16.33	2340	13.75	13740	8.00	1920	6.67	395	6.50	225	6.42	145	6.21	2	6.92	655
20	7.42	1230	6.67	395	7.04	265	7.71	645	18.04	3340	14.96	17550	7.58	1420	6.71	435	6.50	225	6.42	145	6.17	0	6.83	560
21	7.33	1120	6.67	395	7.33	455	8.08	1060	22.00	4060	14.37	15630	7.33	1120	6.75	475	6.50	225	6.37	95	6.25	12	6.79	515
22	7.00	745	6.71	435	7.62	655	8.12	1110	17.17	2800	13.58	13250	7.37	1170	6.75	475	6.50	225	6.29	22	6.42	145	6.71	435
23	7.00	745	6.92	600	7.92	875	7.75	690	16.33	2340	11.71	8380	7.50	1320	6.71	435	6.50	225	6.29	22	6.37	95	6.62	345
24	6.87	600	6.92	600	7.92	875	7.67	600	16.08	2680	10.87	6590	7.42	1230	6.67	395	6.42	145	6.37	95	6.37	95	6.58	305
25	6.83	560	6.67	345	7.87	820	8.00	965	17.75	2920	10.04	5000	7.37	1170	6.67	395	6.50	225	6.37	95	6.25	12	6.67	395
26	6.79	515	6.67	345	8.42	1230	7.46	385	28.00	3280	9.37	3850	7.29	1070	6.96	700	6.50	225	6.33	55	6.29	22	6.67	395
27	6.75	475	6.58	255	8.46	1280	7.92	875	22.00	3280	8.50	2560	7.04	790	7.71	1580	6.50	225	6.33	55	6.21	2	6.67	395
28	6.79	515	6.67	345	8.21	975	8.25	1260	20.00	3280	8.21	2190	7.00	745	7.58	1420	6.50	225	6.29	22	6.33	55	6.62	345
29	6.96	700	6.75	425	7.96	920	7.50	425	.....	.....	8.08	2020	7.00	745	7.33	1120	6.50	225	6.33	55	6.42	145	6.58	305
30	7.37	1170	6.71	385	7.75	800	7.58	505	.....	.....	8.37	2400	7.08	835	7.25	1020	6.50	225	6.29	22	6.25	12	6.50	225
31	7.75	1620	.....	.....	7.79	845	8.58	835	.....	.....	8.37	2400	.....	.....	7.17	930	.....	.....	6.33	55	6.29	22	.....	....

Monthly Discharge of Thames River (Main Stream) at Kilworth for year ending September 30th, 1918

Drainage Area, 1,270 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	1,620	55	502	1.28	.04	.40	.46
November "	1,230	255	507	.97	.20	.40	.45
December "	1,280	265	675	1.01	.21	.53	.61
anuary (1918)	1,260	385	831	.99	.30	.65	.75
February	4,060	20	2,041	3.20	.02	1.61	1.68
March	17,550	2,020	6,438	13.82	1.59	5.07	5.84
April	4,690	600	1,316	3.69	.47	1.04	1.16
May	1,580	395	669	1.24	.31	.53	.61
June	835	145	356	.66	.11	.28	.31
July	305	22	131	.24	.02	.10	.12
August	145	0	45	.11	.00	.04	.05
September	835	12	402	.66	.01	.32	.36
The year	17,550	0	1,158	13.82	.00	.91	12.38

Thames River (North Branch) near Fanshawe

Location—At the highway bridge near Fanshawe Post Office, between lots 8 and 9, concession 4 and 5, Township of London, County of Middlesex.

Records Available—Daily gauge heights and discharge measurements from May 13, 1915.

Drainage Area—585 square miles.

Gauge—Vertical staff 0 to 12 feet on right abutment, downstream side. Elevation of zero of gauge 4.00 is referred to a B.M. (elevation 30.00) on tension rod, down stream side, 170 feet from the initial point of soundings.

Channel and Control—The channel is straight above and below section for 500 feet. The bed of the stream is composed of clay and gravel, the banks are high and will not overflow. The channel and control is shifting during high-water periods.

Discharge Measurements—Made from the bridge and at a permanent wading section about 500 feet above during low water.

Accuracy—This curve is fairly well defined.

Observer—Allen Donley, London.

Discharge Measurements of Thames River (North Branch) near Fanshawe in 1917-18

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 24.....	Yeates, W.....	88	120	1.38	6.89	186	.....
Nov. 5.....	"	95	145	1.91	7.13	278	.....
Dec. 27	"	102	272	1.50	7.75	408 (a)	.....
1918		24	27	1.69	6.75	45 (a)	.....
Jan. 30.....	"						
Mar. 16.....	Roberts, E.....	171	975	2.67	9.42	2,611	.....
April 7.....	"	171	594	.60	7.29	357	.....
July 27.....	"	20	20	1.02	5.17	24	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of Thames River (North Branch) near Fanshawe for 1917-18

Drainage Area, 585 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	6.23	35	7.00	195	6.79	125	7.00	128	6.67	33	8.58	351	8.64	1660	6.46	77	6.62	115	5.33	23	5.21	22	.....	.....
2	6.29	44	7.04	211	6.79	125	6.92	109	6.81	54	8.54	333	8.60	1620	6.33	54	6.46	77	5.21	22	5.23	22	.....	.....
3	6.27	40	7.06	219	6.85	128	6.75	75	6.85	60	8.48	351	9.04	2140	6.37	60	6.31	52	5.46	25	5.19	22	.....	.....
4	6.23	35	7.10	235	6.81	118	6.77	70	6.77	48	8.42	324	8.83	1890	6.35	58	6.12	36	5.48	25	5.23	22	.....	.....
5	6.19	29	7.14	251	6.87	132	6.64	51	6.75	38	8.48	351	8.37	1360	6.21	41	6.33	54	5.27	23	5.21	22	.....	.....
6	6.25	38	7.21	279	6.96	155	6.60	45	6.77	40	8.83	328	7.83	790	6.17	38	7.08	262	5.27	23	5.23	22	.....	.....
7	6.23	35	7.19	271	6.96	155	6.69	58	6.79	43	8.81	320	7.52	505	6.23	43	6.96	216	5.23	22	5.02	20	.....	.....
8	6.25	38	7.14	251	7.00	165	6.67	56	6.77	40	8.67	263	7.27	354	6.19	40	6.75	150	5.25	22	5.23	22	6.00	30
9	6.29	44	7.10	235	7.00	165	6.71	62	6.79	43	8.56	342	7.04	246	6.10	35	6.52	90	5.19	22	5.21	22	5.87	29
10	6.27	40	7.06	219	6.96	155	6.75	68	6.75	38	8.48	450	6.89	192	6.06	33	6.29	49	5.23	22	5.35	24	5.81	28
11	6.35	53	6.96	183	6.83	111	6.92	99	6.71	32	8.42	600	6.71	138	6.08	34	6.06	33	5.23	22	5.54	25	5.85	28
12	6.37	56	6.94	177	6.94	138	7.04	113	7.04	51	8.14	620	6.56	100	6.14	37	5.98	30	5.25	22	5.52	25	6.00	30
13	6.44	66	6.85	152	6.83	111	7.12	132	7.29	58	8.23	840	6.56	100	6.23	43	5.87	29	5.23	22	5.44	24	6.33	54
14	6.46	69	6.81	142	6.87	120	6.92	89	7.67	109	7.98	940	6.48	81	6.14	37	5.77	28	5.25	22	5.37	24	6.35	58
15	6.37	56	6.77	132	6.85	115	6.96	97	14.00	195	11.39	6300	6.46	77	6.10	35	5.81	28	5.21	22	5.27	23	6.39	64
16	6.31	47	6.73	122	6.83	111	6.96	97	12.00	195	10.67	4350	6.44	73	5.94	29	5.87	29	5.21	22	5.25	22	6.87	186
17	6.35	53	6.69	113	6.85	115	6.96	97	9.00	195	10.67	4350	6.46	77	5.89	29	5.50	25	5.23	22	5.17	22	7.08	262
18	6.34	51	6.73	122	6.89	125	6.83	72	8.31	142	10.12	3520	7.33	386	5.87	29	5.58	26	5.23	22	5.14	21	6.87	186
19	6.62	99	6.71	118	6.83	101	6.87	79	8.12	145	10.96	4910	7.39	420	5.85	28	5.37	24	5.19	22	5.08	21	6.62	115
20	7.58	450	6.64	103	6.83	101	6.96	87	12.00	195	11.71	7530	7.25	342	5.79	28	5.48	25	5.23	22	5.10	21	6.67	128
21	7.44	389	6.60	85	6.87	109	6.92	79	9.00	195	11.21	5640	7.29	364	5.71	27	5.39	24	5.19	22	5.14	21	6.52	90
22	7.12	243	6.52	70	6.92	120	6.81	62	8.62	243	10.39	3910	7.62	590	5.71	27	5.35	24	5.19	22	5.08	21	6.27	47
23	7.02	203	6.39	43	7.17	186	6.75	52	8.50	235	9.96	3300	7.42	438	5.64	26	5.46	25	5.08	21			6.19	40
24	6.87	158	6.31	32	7.29	231	6.77	56	8.44	251	9.81	3100	7.14	288	5.64	26	5.35	24	5.23	22			6.08	34
25	6.87	158	6.23	22	7.46	299	6.77	58	8.75	338	9.58	2800	6.96	216	5.67	27	5.19	22	5.19	22			6.21	41
26	6.62	99	6.37	40	7.48	307	6.79	58	9.50	410	9.42	2600	7.25	342	5.87	29	5.35	24	5.23	22			6.08	34
27	6.52	79	6.48	57	7.62	346	6.81	62	9.17	395	9.29	2440	7.19	310	7.12	279	5.27	23	5.12	21			5.94	29
28	6.52	79	6.54	73	7.44	271	6.75	52	8.85	338	9.14	2260	7.10	270	7.10	270	5.27	23	5.10	21			5.85	28
29	6.54	83	6.60	85	7.39	251	6.77	56	.....	.....	8.85	1910	6.81	168	7.08	262	5.23	22	5.17	22			5.62	26
30	6.58	91	6.69	103	7.17	171	6.73	42	.....	.....	8.71	1740	6.56	100	6.87	186	5.23	22	5.12	21			5.64	26
31	6.96	183	.....	.....	7.12	158	6.67	33	.....	.....	8.54	1550	.....	....	6.73	144	.....	....	5.21	22			.....	.....

Aug. 22 to Sept. 7, Bridge being repaired, Gauge temporarily removed.

Monthly Discharge of Thames River (North Branch) near Fanshawe for year ending September 30th, 1918

Drainage Area, 585 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917).	450	29	101	.77	.05	.17	.20
November "	279	22	145	.48	.04	.25	.28
December "	346	101	162	.59	.17	.28	.32
January (1918).	132	33	74	.23	.06	.13	.15
February	410	32	149	.70	.05	.25	.26
March	7,530	263	2,214	12.87	.45	3.78	4.36
April	2,140	73	521	3.66	.12	.89	.99
May	279	26	68	.48	.04	.12	.14
June	262	22	54	.45	.04	.09	.10
July	25	21	22	.04	.04	.04	.05
August	25	20	22	.04	.03	.04	.05
September	262	26	69	.45	.04	.12	.13
The year	7,530	20	314	12.87	.03	.54	7.29

Thames River (South Branch) near Ealing

Location—At the highway bridge known as Vauxhall Bridge between lots 10 and 11, concession B, between Townships of London and Westminster, County of Middlesex.

Records Available—Daily gauge heights and discharge measurements from May 11, 1915.

Drainage Area—515 square miles.

Gauge—Vertical staff 0 to 12 feet on downstream side of first right pier. Elevation of zero of gauge is 4.00, referred to B.M., elevation 30.00.

Channel and Control—The channel is straight above and below for 800 feet. The banks and control are shifting under high-water conditions.

Discharge Measurements—Made from the bridge. During the extreme low water a wading section is used.

Winter Flow—The relation of gauge height to discharge is affected by ice during the winter months.

Accuracy—The rating curve is fairly well defined up to gauge height 11.00 feet.

Observer—Edna Leathorn, London.

Discharge Measurements of Thames River (South Branch) near Ealing in 1917-18

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 28....	Yeates, W.....	153	237	1.23	6.69	294	.....
Nov. 5....	"	155	267	1.31	6.86	350	.....
Dec. 28....	"	155	227	1.04	7.17	235(a)	.....
1918							
Jan. 28....	"	137	81	.68	7.08	55(a)	.....
Mar. 16....	Roberts, E.....	193	626	4.08	10.50	2,561	.....
April 7....	"	159	309	1.40	7.06	432	.....

(a) Ice measurement

Daily Gauge Height and Discharge of Thames River (South Branch) near Ealing for 1917-18

Drainage Area, 515 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	6.17	116	7.31	505	6.69	242	6.87	146	7.21	98	9.58	1800	7.71	675	6.79	306	6.75	292	5.80	20	5.80	20	5.92	50
2	6.42	191	7.17	448	6.42	161	6.85	140	7.17	88	8.75	1240	8.39	1030	6.84	324	6.79	306	6.08	90	5.77	17	5.83	28
3	6.25	140	7.00	380	6.42	161	6.96	173	7.21	98	10.96	3010	8.37	1020	6.62	251	6.54	227	6.12	101	5.75	15	5.85	32
4	6.21	128	6.92	352	6.46	173	6.96	143	7.08	65	8.96	1360	7.87	755	6.50	215	6.31	158	6.04	80	5.73	13	5.90	45
5	6.27	146	6.83	320	6.29	122	6.96	143	7.21	98	9.37	1640	7.37	530	6.44	197	6.25	140	6.00	70	5.62	2	6.23	134
6	6.33	164	6.77	300	6.48	149	6.92	131	7.29	122	9.83	1990	7.18	452	6.37	176	6.28	149	6.00	70	5.77	17	6.69	272
7	6.29	152	6.64	257	6.33	104	6.87	116	7.33	134	9.71	1890	7.00	380	6.44	197	6.33	164	5.96	60	5.71	11	6.42	191
8	5.96	60	6.62	251	6.67	206	7.00	155	7.04	19	9.87	2020	7.00	380	6.46	203	6.21	128	6.00	70	5.71	11	6.17	116
9	6.12	101	6.54	227	6.58	179	6.98	119	7.46	128	8.79	1260	6.93	356	6.37	176	6.12	101	5.96	60	5.75	15	6.04	80
10	6.19	122	6.50	215	6.67	206	6.92	101	7.33	90	8.12	885	6.79	306	6.44	197	6.14	107	5.94	55	5.80	20	6.00	70
11	6.17	116	6.71	278	6.73	194	7.00	125	7.42	116	8.29	980	6.71	278	6.33	164	6.17	116	5.92	50	5.80	20	5.96	60
12	6.27	146	6.54	227	6.69	182	7.00	125	8.27	146	8.75	1240	6.73	286	6.44	197	6.29	152	5.92	50	5.80	20	6.13	104
13	6.67	266	6.43	194	6.71	188	7.00	125	9.46	203	10.46	2530	6.71	278	6.67	266	6.42	191	5.81	22	5.96	60	6.69	272
14	6.62	251	6.44	197	6.77	206	6.85	82	11.67	266	12.00	4210	6.58	239	6.75	292	6.28	149	5.77	17	5.87	38	6.94	359
15	6.52	221	6.44	197	6.77	206	6.92	101	14.00	820	11.08	3140	6.54	227	6.67	266	6.10	95	5.67	7	5.89	42	6.71	278
16	6.37	176	6.46	203	6.64	137	7.00	125	12.00	820	10.42	2500	6.52	221	6.44	197	6.04	80	5.80	20	5.81	22	6.73	286
17	6.35	170	6.40	185	6.62	131	6.98	119	10.66	910	10.98	3030	6.60	245	6.29	152	5.96	60	5.83	28	5.83	28	6.79	306
18	6.31	158	6.37	176	6.77	176	7.04	137	9.41	1330	10.93	2980	7.62	635	6.21	128	6.04	80	5.81	22	5.80	20	6.75	292
19	6.92	352	6.42	191	6.79	182	6.96	113	10.08	1440	11.89	4070	7.79	715	6.12	101	5.96	60	5.83	28	5.62	2	6.65	260
20	7.92	780	6.37	176	6.85	200	7.17	176	15.96	1360	12.68	5130	7.41	545	6.12	101	6.00	70	5.83	28	5.71	11	6.54	227
21	7.25	480	6.37	176	7.17	300	7.02	75	11.46	1700	12.14	4390	7.25	480	6.12	101	6.04	80	5.75	15	5.75	15	6.44	197
22	6.94	359	6.52	206	7.37	334	7.17	116	9.46	1070	11.56	3670	7.35	520	6.25	140	6.06	85	5.70	10	5.85	32	6.33	164
23	6.81	314	6.69	242	7.56	404	7.12	101	8.83	1280	10.27	2360	7.21	464	6.14	107	6.00	70	5.73	13	5.92	50	6.29	152
24	6.75	293	6.64	197	7.46	366	7.17	116	8.75	1240	9.35	1620	7.16	444	6.21	128	5.92	50	5.83	28	5.92	50	6.29	152
25	6.71	279	7.83	510	7.33	320	7.25	140	8.83	1280	8.83	1280	7.08	412	6.17	116	6.00	70	5.83	28	5.92	50	6.23	134
26	6.62	251	7.62	468	7.33	320	7.08	90	13.79	6800	8.27	970	7.00	380	6.87	334	5.96	60	5.75	15	5.75	15	6.27	146
27	6.60	245	7.21	404	7.21	278	7.00	70	11.46	3560	7.79	715	6.87	334	7.92	780	6.00	70	5.70	10	5.83	28	6.21	128
28	6.77	300	7.29	416	7.04	197	7.04	55	10.58	2640	7.54	600	6.87	334	7.67	655	5.96	60	5.80	20	5.81	22	6.17	116
29	7.06	404	7.25	400	6.87	146	7.17	88	.....	....	7.50	580	6.87	334	7.12	428	5.92	50	5.77	17	5.83	28	6.10	95
30	7.85	745	7.08	373	6.92	161	7.12	75	.....	....	7.54	600	6.89	342	7.00	380	5.83	28	5.77	17	5.92	50	6.04	80
31	7.87	755	.....	....	6.87	146	7.17	88	.....	....	7.58	615	.....	....	6.92	352	.....	....	5.80	20	5.92	50	.....	....

Monthly Discharge of Thames River (South Branch) near Ealing for year ending September 30th, 1918,

Drainage Area, 515 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October..:(1917)	780	60	270	1.51	.12	.52	.60
November "	510	176	289	.99	.34	.56	.62
December "	404	104	209	.78	.20	.41	.47
January ..(1918)	176	55	116	.34	.11	.23	.27
February	6,800	19	997	13.20	.04	1.94	2.02
March	5,130	580	2.074	9.96	1.13	4.03	4.64
April	1,030	221	453	2.00	.43	.88	.98
May	780	101	246	1.51	.20	.48	.55
June	306	28	115	.59	.05	.22	.25
July.....	101	7	37	.20	.01	.07	.08
August.....	60	2	26	.12	.004	.05	.06
September.....	359	28	161	.70	.05	.31	.35
The year	6,800	2	413	13.20	.004	.80	10.89

Regular Stations

SOUTH-WESTERN ONTARIO DISTRICT

Grand River and Tributaries

River	Location	Drainage Area Sq. Miles	Township	County
Grand	at Belwood	280	West Garafraxa	Wellington
"	at Brantford	2,000	Brantford	Brant
"	near Conestogo	550	Woolwich	Waterloo
"	at Galt	1,360	North Dumfries	"
"	at Glen Morris	1,390	South Dumfries	Brant
"	at York	2,280	Oneida	Haldimand
Speed	at Hespeler	250	Waterloo	Waterloo

Grand River at Belwood

Location—At the bridge in the Village of Belwood, on the 7th concession, Township of West Garafraxa, County of Wellington.

Records Available—From August 31, 1913.

Drainage Area—280 square miles.

Gauge—Vertical steel staff 0 to 12 feet on right abutment. Elevation of zero of gauge is 1366.00, which has remained unchanged since established.

Channel and Control—The channel is straight for about 400 feet above and 600 feet below gauging section. The channel bed at the bridge is solid rock, and permanent at all stages. At the permanent low water section, however, the channel is shifting under high water conditions.

Winter Flow—During the winter months the relation of gauge height to discharge is greatly affected by ice, and readings are taken to determine the winter discharge.

Accuracy—The river stage at this section is not affected by any power plants above or below. The rating curve is well defined, and estimates are considered good.

Observer—H. Hutchinson, Belwood P.O.

Discharge Measurements of Grand River at Belwood in 1917-18

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 19....	Yeates, W.....	65	42	1.17	1367.29	75	.....
Nov. 8....	"	66	31	1.12	1367.03	35	.....
Dec. 14....	"	81	17	.98	1367.33	17(a)	.....
1918							....
Jan. 11....	Roberts, E.....	44	11	.64	1367.50	7 (a)	.....
Apr 6....	"	110	482	1.08	1368.37	521	.....
							....

(a) Ice measurement.

Daily Gauge Height and Discharge of Grand River at Belwood for 1917-8

Drainage Area, 280 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1366.83	6	1367.20	55	1367.17	23	1367.33	2	1367.14	0	1368.83	260	1370.88	3560	1367.48	138	1367.52	152	1366.95	15	1366.75	2	1367.11	37
2	1366.84	7	1367.18	51	1367.17	17	1367.33	2	1367.12	0	1368.81	254	1370.40	2680	1367.41	114	1367.34	92	1366.90	10	1366.75	2	1367.06	29
3	1366.85	8	1367.17	49	1367.17	17	1367.33	2	1367.12	0	1368.88	278	1369.62	1620	1367.34	92	1367.26	70	1366.89	10	1366.73	2	1367.01	22
4	1366.87	8	1367.10	35	1367.17	17	1367.33	2	1367·17	0	1368.68	208	1369.00	995	1367.32	86	1367.19	53	1366.89	10	1366.73	2	1366.98	18
5	1366.92	12	1367.09	34	1367.17	12	1367.33	2	1367.12	0	1368.55	162	1368.58	660	1367.28	75	1367.11	37	1366.88	9	1366.73	2	1367.42	117
6	1366.90	10	1367.08	32	1367.17	12	1367.33	2	1367.09	0	1368.50	145	1368.39	530	1367.27	72	1367.09	34	1366.86	8	1366.72	1	1367.64	194
7	1366.89	9	1367.06	29	1367.10	8	1367.33	2	1367.08	0	1368.47	134	1368.26	453	1367.29	78	1367.08	32	1366.85	8	1366.71	1	1367.43	120
8	1366.87	8	1367.00	20	1367.14	7	1367.33	2	1367.08	0	1368.48	138	1368.19	415	1367.26	70	1367.06	29	1366.83	6	1366.73	2	1367.30	80
9	1366.87	8	1367.00	20	1367.25	15	1367.33	2	1367.12	0	1368.50	145	1367.92	293	1367.25	68	1367.05	28	1366.83	6	1366.83	6	1367.18	51
10	1366.87	8	1367.00	20	1367.25	15	1367.33	2	1367.23	0	1370.04	1030	1367.79	246	1367.25	68	1367.10	35	1366.83	6	1366.87	8	1367.06	29
11	1366.87	8	1367.00	20	1367.33	18	1367.48	7	1367.79	19	1370.06	1050	1367.73	226	1367.27	72	1367.08	32	1366.82	6	1366.89	10	1367.04	26
12	1366.90	10	1367.00	20	1367.33	18	1367.58	13	1368.17	72	1370.97	2070	1367.62	187	1367.30	80	1367.22	60	1366.81	6	1366.84	7	1367.12	39
13	1367.05	28	1367.00	20	1367.33	18	1367.50	8	1368.40	110	1370.34	1320	1367.58	173	1367.44	124	1367.15	45	1366.80	5	1366.80	5	1367.28	75
14	1367.00	20	1367.00	20	1367.33	16	1367.42	4	1368.64	159	1370.32	1300	1367.56	166	1367.63	190	1367.10	35	1366.79	4	1366.77	4	1367.32	86
15	1366.99	19	1367.00	20	1367.33	13	1367.42	4	1368.79	176	1370.14	1120	1367.53	156	1367.48	138	1367.05	28	1366.78	4	1366.75	2	1367.33	89
16	1366.98	18	1367.00	20	1367.33	13	1367.36	1	1368.96	201	1369.94	945	1367.49	142	1367.35	195	1367.01	22	1366.77	4	1366.74	2	1367.36	98
17	1366.97	17	1367.00	20	1367.33	13	1367.34	0	1368.70	80	1369.74	785	1367.50	145	1367.27	72	1366.97	17	1366.77	4	1366.72	1	1367.40	110
18	1366.95	15	1367.00	20	1367.33	13	1367.33	0	1368.68	51	1370.21	1180	1367.72	222	1367.20	55	1366.95	15	1366.77	4	1366.71	1	1367.33	89
19	1367.21	58	1367.00	20	1367.33	13	1367.33	0	1368.96	98	1372.67	5340	1367.77	240	1367.15	45	1366.92	12	1366.77	4	1366.75	2	1367.32	86
20	1367.19	53	1367.00	20	1367.33	13	1367.33	0	1369.42	222	1371.46	4830	1367.69	212	1367.15	45	1366.92	12	1366.77	4	1366.75	2	1367.26	70
21	1367.12	39	1367.00	20	1367.33	13	1367.28	0	1369.44	194	1372.14	6620	1367.70	215	1367.15	45	1367.02	23	1366.76	3	1366.75	2	1367.23	62
22	1367.09	34	1367.08	32	1367.33	13	1367.25	0	1370.15	395	1372.14	6620	1367.78	243	1367.12	39	1366.95	15	1366.75	2	1366.78	4	1367.17	49
23	1367.08	32	1367.08	24	1367.33	13	1367.22	0	1370.08	464	1370.98	3760	1367.76	236	1367.08	32	1366.93	13	1366.75	2	1366.77	4	1367.14	43
24	1367.08	32	1367.08	24	1367.39	19	1367.22	0	1369.87	458	1370.87	3540	1367.75	232	1367.04	26	1366.92	12	1366.75	2	1366.90	10	1367.14	43
25	1367.08	32	1367.08	24	1367.42	12	1367.25	0	1369.97	655	1370.46	2790	1367.69	212	1367.04	26	1366.89	10	1366.75	2	1366.81	6	1367.08	32
26	1367.06	29	1367.08	18	1367.37	8	1367·25	0	1369.34	343	1369.60	1600	1367.62	187	1367.15	45	1366.89	10	1366.75	2	1366.79	4	1367.06	29
27	1367.06	29	1367.08	18	1367.33	6	1367.25	0	1368.94	229	1369.33	1300	1367.54	159	1367.60	180	1366.89	10	1366.75	2	1366.80	5	1367.26	70
28	1367.08	32	1367.08	18	1367.33	4	1367.25	0	1369.12	334	1369.12	1100	1367.44	124	1368.20	420	1366.89	10	1366.75	2	1366.90	10	1367.62	187
29	1367.09	34	1367.08	13	1367.33	4	1367.21	0	.....	....	1369.54	1530	1367.43	120	1367.71	218	1366.89	10	1366.77	4	1366.84	7	1367.40	110
30	1367.24	65	1367.08	13	1367.33	4	1367.19	0	.....	....	1370.12	2260	1367.45	128	1367.56	166	1366.87	8	1366.79	4	1366.83	6	1367.28	75
31	1367.22	60	.....	....	1367.33	2	1367.17	0	.....	....	1370.50	2860	.....	....	1367.46	131	.....	..	1366.77	4	1366.84	7	.....	....

Monthly Discharge of Grand River at Belwood for year ending September 30th, 1918

Drainage Area, 280 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	65	6	24	.23	.02	.09	.10
November "	55	13	25	.20	.05	.09	.10
December "	23	2	13	.08	.01	.05	.06
January (1918)	13	0	2	.05	.00	.01	.01
February	655	0	152	2.34	.00	.54	.56
March	6,620	134	1,828	23.64	.48	6.53	7.53
April	3,560	120	506	12.71	.43	1.81	2.02
May	420	26	100	1.50	.09	.36	.42
June	152	8	32	.54	.03	.11	.12
July	15	2	5	.05	.01	.02	.02
August	10	1	4	.04	.004	.01	.01
September	194	18	72	.69	.06	.25	.28
The year	6,620	0	232	23.64	.00	.83	11.25

Grand River at Brantford

Location—At the Toronto-Hamilton-Buffalo Railway bridge in the City of Brantford, County of Brant.

Records Available—Discharge measurements from August, 1912. Daily gauge heights from July 8, 1913.

Drainage Area—2,000 square miles.

Gauge—Vertical steel staff, 0 to 12 feet on left abutment. Elevation of zero of gauge is 643.00, which has remained unchanged since established.

Channel and Control—The flow is confined between the abutments of the bridge at all stages. The bed and left bank is shifting under high water conditions.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice, and measurements are made to determine the winter flow.

Regulation—During the low water stage serious fluctuations are noticeable at this location. The observed mean gauge height does not always give the correct mean daily stage.

Accuracy—With the exception of a slight angle at section these records can be classified as good.

Observer—John Anguish, Brantford.

Discharge Measurements of Grand River at Brantford in 1917-18

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 6....	Yeates, W.....	282	884	.58	644.52	514	.....
Nov. 1....	"	360	1,174	1.17	645.37	1,373	.....
Dec. 1....	"	321	939	.73	644.70	691	.....
1918							
Jan. 2....	"	198	775	.71	645.00	548(a)	.....
Feb. 7....	"	148	529	.40	644.73	213(a)	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of Grand River at Brantford for 1917-18

Drainage Area, 2,000 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	644.23	258	645.27	1150	644.71	610	644.58	258	644.73	230	656.00	13150	649.46	10200	645.25	1130	645.17	1050	644.10	190	644.10	190	644.27	282
2	644.14	210	645 06	940	644.58	454	644.71	545	644.56	154	654.42	12910	650.48	13090	645.21	1090	645.00	880	644.40	360	644.04	166	644.04	166
3	644.25	270	644.96	840	644.75	600	644.75	330	644.69	210	653.21	15300	649.62	10650	645.14	1020	644.85	735	644.41	367	644.08	182	644.27	282
4	644.21	246	644.89	770	644.75	600	644.45	330	644.92	342	652.50	14650	648.10	6490	645.08	960	644.79	680	644.37	342	643.77	68	644.31	306
5	644.27	282	644.85	735	644.67	530	643.96	24	644.83	288	652.17	15180	647.14	4230	645.02	900	644.73	625	644.39	354	643.75	62	644.75	645
6	644.21	246	644.81	700	644.83	670	644.44	166	644.94	354	652.02	14710	646.54	3010	644.98	860	644.69	590	644.33	318	644.12	200	645.79	1780
7	644.21	246	644.77	665	644.54	423	644.77	342	644.75	215	651.37	12760	646.23	2460	644.94	820	644.60	510	644.10	190	644.10	190	645.60	1520
8	644.14	210	644.73	625	644.81	655	644.52	200	644.83	258	650.56	10480	646.17	2360	644.85	735	644.52	446	644.31	306	644.00	150	645.18	1060
9	644.31	306	644.69	590	644.37	312	644.60	240	644.81	246	650.48	10250	646.04	2150	644.87	755	644.48	416	644.06	174	644.10	190	644.94	820
10	644.42	374	644.67	575	644.83	625	644.58	230	644.94	324	651.42	12910	645.71	1660	644.96	840	644.58	494	644.25	270	643.89	106	644.83	715
11	644.25	270	644.62	530	644.94	725	644.50	190	645.02	312	650.56	10480	645.54	1450	645.02	900	644.69	590	644.31	306	644.35	330	644.60	510
12	644.35	330	644.69	590	644.87	665	644.42	138	645.48	580	651.02	11770	645.46	1360	644.96	840	644.73	625	644.27	282	644.52	446	644.58	494
13	644.39	354	644.60	510	644.83	625	644.25	75	646.04	1020	653.35	15740	645.44	1330	645.02	900	644.75	645	644.17	225	644.25	270	644.71	610
14	644.50	430	644.64	545	644.83	580	645.02	486	646.29	1170	655.00	17880	645.33	1210	645.04	920	644.85	715	643.83	86	644.27	282	646.58	3080
15	644.56	478	644.67	575	644.83	580	644.81	336	648.60	3120	656.00	17880	645.33	1210	645.06	940	644.81	700	644.12	200	644.25	270	645.96	2030
16	644.64	545	644.56	478	644.54	354	644.62	225	650.44	7370	654.42	15950	645.25	1130	645.00	880	644.67	575	644.19	235	644.14	210	646.19	2390
17	644.64	545	644.52	446	644.92	665	644.62	225	650.04	6330	655.00	17880	645.31	1190	644.94	820	644.64	545	644.19	235	643.96	134	645.89	1920
18	644.56	478	644.52	446	644.81	520	644.52	178	649.75	5600	655.00	17880	645.89	1920	644.75	645	644.52	446	644.19	235	643.92	118	645.58	1500
19	644.69	590	644.56	478	644.83	535	644.71	276	649.58	5190	656.00	17880	646.27	2530	644.54	460	644.44	388	644.19	235	644.14	210	645.39	1280
20	644.94	820	644.52	446	644.83	535	644.56	195	652.83	14140	657.00	21870	646.19	2390	644.71	610	644.46	402	644.06	174	644.14	210	645.31	1190
21	645.33	1210	644.67	575	644.89	590	644.64	235	656.00	11710	656.00	21870	645.89	1920	644.75	645	644.46	402	643.96	134	644.00	150	645.25	1130
22	645.10	980	644.71	610	644.94	590	644.71	246	656.50	13150	655.00	21870	645.89	1920	644.71	610	644.31	306	644.17	225	644.02	158	645.12	1000
23	644.98	860	644.87	755	644.96	610	644.64	210	655.08	11930	652.67	16760	645.87	1900	644.73	625	644.35	330	644.12	200	644.04	166	645.04	920
24	644.94	820	644.77	665	645.12	755	644.71	246	654.54	10420	651.46	16080	645.77	1750	644.60	510	644.29	294	644.12	200	643.79	72	644.77	665
25	644.77	665	644.69	590	644.89	545	644.94	388	657.75	13900	650.67	13660	645.75	1720	644.67	575	644.33	318	644.19	235	643.83	86	644.79	680
26	644.79	680	644.73	625	645.12	710	644.71	246	659.37	15800	649.58	10530	645.64	1570	644.75	645	644.25	270	644.12	200	644.12	200	644.71	610
27	644.75	645	644.89	770	645.04	635	644.69	235	659.75	17020	648.08	6440	645.48	1380	645.00	880	644.29	294	644.04	166	644.19	235	644.83	715
28	644.75	645	644.77	665	645.10	690	644.83	318	658.50	16210	647.58	5190	645.33	1210	645.12	1000	644.29	294	643.87	100	644.25	270	644.64	545
29	644.83	720	644.69	590	644.71	367	644.94	388	.....	.....	647.44	4880	645.29	1170	645.50	1400	644.31	306	644.04	166	644.35	330	644.67	575
30	644.98	860	644.81	700	644.77	374	644.98	416	.....	.....	648.21	6780	645.23	1110	645.62	1550	644.19	235	644.19	235	644.14	210	644.73	625
31	645.14	1020	.....	....	644.71	336	644.85	300	.....	.....	649.10	9190	.....	.....	645.33	1210	.....	....	644.12	200	644.19	235	.....	....

Monthly Discharge of Grand River at Brantford for year ending September 30th, 1918

Drainage Area, 2,000 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October ..(1917).	1,210	210	535	.60	.10	.27	.31
November "	1,150	446	639	.58	.22	.32	.36
December "	755	312	563	.38	.16	.28	.32
January (1918).	545	24	265	.27	.01	.13	.15
February	17,020	154	5,628	8.51	.08	2.81	2.93
March	21,870	4,880	13,895	10.94	2.44	6.95	8.01
April.....	13,090	1,110	2,932	6.54	.56	1.47	1.64
May.....	1,550	460	860	.78	.23	.43	.50
June	1,050	235	504	.52	.12	.25	.28
July	367	86	230	.18	.04	.12	.14
August.....	446	62	197	.22	.03	.10	.12
September.....	3,080	166	1,002	1.54	.08	.50	.56
The year.....	21,870	24	2,254	10.94	.01	1.13	15.30

Grand River near Conestogo

Location—At the highway bridge ¼ mile below the Village of Conestogo, Township of Woolwich, County of Waterloo.

Records Available—From July 16, 1913.

Drainage Area—550 square miles.

Gauge—Vertical steel staff 0 to 12 feet on the centre pier of bridge. Elevation of zero is 1017.00 feet.

Channel and Control—The channel is straight for about 300 feet above and below the gauging section. The banks are low and liable to overflow. The bed is composed of gravel, and all the water is confined between the abutments of the bridge, except at a very serious flood. In flood stages the banks and bed are liable to shift slightly.

Discharge Measurements—Made from the bridge during high water, and at a permanent low water section located 600 feet upstream during the low water period.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice during the winter season, and measurements are made to determine the winter flow.

Accuracy—The slight shifting of the channel has little effect. The rating curve is well defined, and records are good.

Observer—Geo. Schinbein, Conestogo.

Discharge Measurements of Grand River near Conestogo in 1917-18

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 26....	Yeates, W.....	135	88	1.03	1018.25	91	.....
Nov. 7....	"	156	188	.66	1018.25	125	.....
1918							
Jan. 31....	"	115	22	.73	1018 75	16(a)	.....
April 6....	Roberts, E.....	226	414	2.04	1019.71	842	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of Grand River near Conestogo for 1917-18

Drainage Area, 550 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1017.73	23	1018.67	218	1018.23	76	1018.77	74	1018.69	19	1020.12	238	1022.75	4440	1018.69	226	1018.87	298	1017.77	27	1017.79	29	1017.87	37
2	1017.69	19	1018.54	172	1018.19	68	1018.67	42	1018.71	21	1020.02	238	1022.56	4170	1018.60	190	1018.46	148	1018.00	50	1017.77	27	1018.02	52
3	1017.83	33	1018.44	142	1018.46	133	1018.71	41	1018.92	42	1019.83	242	1021.37	2610	1018.56	178	1018.37	121	1018.00	50	1017.56	6	1018.02	52
4	1017.83	33	1018.27	94	1018.31	92	1018.69	34	1018.75	25	1019.56	214	1020.48	1610	1018.52	166	1018.25	90	1017.92	42	1017.56	6	1018.10	60
5	1017.94	44	1018.31	103	1018.27	74	1018.75	35	1018.81	31	1019.46	254	1020.04	1160	1018.39	127	1018.14	68	1017.79	29	1017.64	14	1018.75	250
6	1018.08	58	1018.29	98	1018.27	74	1018.69	24	1018.67	17	1019.33	282	1019.71	860	1018.44	142	1018.06	56	1017.69	19	1017.54	4	1018.77	258
7	1017.94	44	1018.31	103	1018.46	103	1018.69	19	1018.50	0	1019.29	306	1019.56	730	1018.44	144	1018.06	56	1017.73	23	1017.67	17	1018.71	234
8	1018.04	54	1018.29	98	1018.46	92	1018.62	12	1018.50	0	1019.14	286	1019.52	695	1018.35	115	1018.08	58	1017.71	21	1017.96	46	1018.46	148
9	1018.12	64	1018.29	98	1018.48	86	1018.64	14	1018.50	0	1018.92	238	1019.21	477	1018.35	115	1017.94	44	1017.77	27	1018.08	58	1018.25	90
10	1018.04	54	1018.21	82	1018.48	86	1018.73	23	1018.60	10	1019.00	310	1018.96	340	1018.39	127	1018.23	86	1017.87	37	1017.94	44	1018.23	86
11	1017.92	42	1018.10	60	1018.56	103	1018.71	21	1018.70	20	1018.92	320	1018.85	290	1018.39	127	1018.14	68	1017.85	35	1017.67	17	1018.21	82
12	1017.96	46	1018.25	90	1018.42	74	1018.69	19	1018.80	30	1019.29	535	1018.81	274	1018.31	103	1018.48	154	1017.73	23	1017.79	29	1018.29	98
13	1018.27	94	1018.04	54	1018.42	74	1018.67	17	1020.25	90	1019.87	1000	1018.73	242	1018.50	160	1018.42	136	1017.73	23	1017.75	25	1018.79	266
14	1018.21	82	1018.04	54	1018.48	86	1018.75	25	1023.54	380	1020.79	1950	1018.67	218	1018.62	198	1018.27	94	1017.67	17	1017.71	21	1018.69	226
15	1018.21	82	1018.15	70	1018.52	94	1018.75	25	1022.75	310	1020.46	1590	1018.71	234	1018.60	190	1018.19	78	1017.73	23	1017.67	17	1018.75	250
16	1018.23	86	1018.04	54	1018.48	86	1018.77	27	1022.75	290	1020.12	1240	1018.67	218	1018.48	154	1017.92	42	1017.79	29	1017.69	19	1018.89	306
17	1018.10	60	1018.19	78	1018.44	78	1018.87	37	10.22.67	270	1020.46	1590	1019.00	360	1018.31	103	1018.04	54	1017.85	35	1017.73	23	1018.83	282
18	1018.14	68	1017.92	42	1018.56	103	1018.85	35	1022.58	270	1020.87	2040	1019.46	650	1018.27	94	1018.19	78	1017.71	21	1017.56	6	1018.64	206
19	1018.39	127	1018.15	70	1018.58	109	1018.89	39	1023.29	335	1022.50	4090	1019.33	560	1018.25	90	1018.04	54	1017.69	19	1017.58	8	1018.73	242
20	1018.67	218	1018.04	54	1018.56	103	1018.92	42	1023.50	380	1024.37	7020	1019.08	400	1018.27	94	1017.89	39	1017.67	17	1017.58	8	1018.60	190
21	1018.44	142	1018.02	52	1018.64	127	1018.92	42	1021.12	310	1025.25	8430	1019.04	380	1018.12	64	1017.81	31	1017.52	2	1017.56	6	1018.48	154
22	1018.42	136	1018.18	76	1018.71	148	1018.85	35	1020.17	218	1025.04	8090	1019.19	464	1018.25	90	1018.04	54	1017.64	14	1017.71	21	1018.37	121
23	1018.37	121	1018.43	124	1018.60	115	1018.83	33	1019.67	218	1023.29	5290	1019.08	400	1018.19	78	1017.87	37	1017.54	4	1017.87	37	1018.31	103
24	1018.35	115	1018.27	84	1018.69	142	1018.85	35	1019.37	198	1022.71	4380	1019.12	422	1018.04	54	1017.83	33	1017.79	29	1018.29	98	1018.29	98
25	1018.35	118	1018.33	96	1018.67	136	1018.92	42	1020.33	282	1022.33	3850	1019.00	360	1018.06	56	1017.89	39	1017.77	27	1017.87	37	1018.31	103
26	1018.27	94	1018.37	106	1019.00	230	1018.85	35	1023.08	400	1021.17	2370	1018.87	298	1018.23	86	1017.83	33	1017.67	17	1017.94	44	1018.25	90
27	1018.29	98	1018.37	106	1018.89	172	1018.85	35	1020.50	270	1020.69	1840	1018.75	250	1018.60	190	1017.83	33	1017.58	8	1017.75	25	1018.23	86
28	1018.02	52	1018.25	80	1018.85	145	1018.77	27	1020.53	282	1020.58	1720	1018.58	184	1019.08	400	1017.89	39	1017.58	8	1017.89	39	1018.27	94
29	1018.35	115	1018.25	80	1018.89	142	1018.67	17	.....	....	1020.83	1990	1018.56	178	1019.25	505	1017.87	37	1017.79	29	1018.00	50	1018.42	136
30	1018.75	250	1018.12	57	1018.81	103	1018.71	21	.....	....	1021.67	2980	1018.64	206	1018.87	298	1017.77	27	1017.92	42	1017.98	48	1018.35	115
31	1018.87	298	.....	....	1018.77	84	1018.73	17	.....	....	1021.87	3240	.....	....	1018.69	226	.....	....	1017.73	23	1018.04	54	.....	....

Monthly Discharge of Grand River near Conestogo for year ending September 30th, 1918

Drainage Area, 550 Square Miles.

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	298	19	93	.54	.03	.17	.20
November "	218	42	90	.40	.08	.16	.18
December.. "	230	68	108	.42	.12	.20	.23
January. . (1918)	74	12	30	.13	.02	.05	.06
February	400	0	168	.73	.00	.31	.32
March.....	8,430	214	2,199	15.33	.39	4.00	4.61
April.....	4,440	178	789	8.07	.32	1.43	1.60
May.....	505	54	158	.92	.10	.29	.33
June.	298	27	73	.54	.05	.13	.15
July.....	50	2	25	.09	.004	.05	.06
August.....	98	4	28	.18	.008	.05	.06
September.....	306	37	150	.56	.07	.27	.30
The year	8,430	0	328	15.33	.00	.60	8.09

Grand River at Galt

Location—At the Concession Street bridge, in the City of Galt, Township of North Dumfries, County of Waterloo.

Records Available—From July 21, 1913.

Drainage Area—1,360 square miles.

Gauge—Vertical steel staff 0 to 12 feet on first left pier of the bridge. Elevation of zero of gauge is 851.00, which has remained unchanged since established.

Channel and Control—The channel is straight for 1,000 feet above and below the section. The bed is solid rock formation. Residents each year encroach on the natural channel by building up the banks to protect their lots from washing away.

Discharge Measurements—Made from bridge for high stages, and at a permanent wading section 150 feet upstream during low stages.

Winter Flow—Ice slightly affects the relation of gauge height to discharge during the winter, and measurements are made to determine the winter flow.

Regulation—This section is subject to serious fluctuations in the river stage caused by the operation of the Galt dam situated ¼ mile above.

Accuracy—The rating curve is fairly well defined, and records are good.

Observer—Charles Parker, Galt.

Discharge Measurements of Grand River at Galt in 1917-18

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 13....	Yeates, W.....	142	227	1.23	852.23	279	.....
Nov. 2....	"	180	692	.88	852.97	608	.....
Dec. 8....	"	142	202	.85	852.00	171	.....
1918							
Jan. 4....	"	133	151	.94	851.96	141 (a)	.....
Feb. 11....	"	140	198	.95	852.50	188 (a)	.....
" 27....	"	194	1,335	3.39	856.29	4,527	.....
" 28....	"	193	1,296	3.27	856.08	4,242	.....
" 28....	"	193	1,277	3.16	856.00	4,035	.....
" 28....	"	193	1,258	3.10	855.92	3,898	.....
Mar. 1....	Roberts, E.....	192	1,199	2.89	855.64	3,467	.....
" 1....	"	192	1,161	2.75	855.42	3,191	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of Grand River at Galt for 1917-18

Drainage Area, 1.360 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	852.04	203	853.31	750	852.35	316	852.35	278	852.73	271	855.17	2750	858.37	8620	853.02	600	852.87	530	852.08	217	851.79	118	851.92	161
2	852.17	249	852.92	555	852.17	231	852.34	275	852.67	249	854.54	1870	858.75	9570	852.92	555	852.79	494	852.08	217	851.77	112	851.92	161
3	852.18	253	852.60	413	852.21	246	852.27	249	852.54	203	854.50	1820	857.46	6690	852.87	530	852.54	389	852.08	217	851.71	95	852.00	189
4	852.13	235	852.71	458	852.35	297	852.35	278	852.69	256	854.37	1670	856.50	4930	852.75	476	852.48	365	851.96	175	851.60	69	852.17	249
5	852.12	231	852.69	450	852.21	246	852.10	172	852.73	271	854.37	1670	855.12	2670	852.71	458	852.35	316	852.02	196	851.71	95	852.62	421
6	852.17	249	852.60	413	852.19	238	851.98	131	852.64	238	854.25	1530	854.58	1920	852.64	429	852.29	293	852.00	189	851.64	78	853.79	1090
7	852.06	210	852.58	405	852.14	220	852.31	228	852.62	231	854.04	1320	854.25	1530	852.67	442	852.25	278	851.89	151	851.67	85	853.23	705
8	852.19	256	852.46	357	852.14	220	852.31	228	852.42	261	853.96	1240	854.08	1360	852.71	458	852.17	249	852.00	189	851.69	90	852.79	494
9	852.17	249	852.42	342	852.08	182	852.33	217	852.42	261	853.67	990	853.87	1160	852.67	442	852.10	224	852.19	256	851.75	106	852.62	421
10	852.18	253	852.39	330	852.37	286	853.33	217	852.48	182	853.33	760	853.62	955	852.64	429	852.04	203	852.02	196	852.00	189	852.33	308
11	852.21	264	852.25	278	852.35	278	852.39	220	852.62	231	853.54	895	853.42	815	852.67	442	852.27	286	852.21	264	852.06	210	852.25	278
12	852.25	278	852.39	330	852.37	286	852.56	282	852.96	257	854.25	1530	853.37	785	852.69	450	852.29	293	852.21	264	851.89	151	852.29	293
13	852.31	301	852.43	346	852.42	304	852.71	319	853.06	397	855.42	3120	853.12	650	852.81	505	852.37	323	852.12	231	852.02	196	853.58	925
14	852.44	350	852.35	316	852.46	319	852.85	373	853.62	650	856.58	5070	853.17	675	852.92	555	852.52	381	851.96	175	851.94	168	854.25	1530
15	852.54	389	852.33	308	852.35	278	852.73	308	856.29	3720	856.33	4640	853.12	650	852.94	565	852.42	342	851.89	151	851.92	161	853.46	845
16	852.56	397	852.35	316	852.27	249	852.69	293	857.12	5140	856.17	4370	853.04	610	852.83	510	852.25	278	851.96	175	851.83	131	853.67	990
17	852.44	350	852.33	308	852.27	249	852.67	267	856.04	3310	855.83	3790	853.14	660	852.69	450	852.12	231	852.08	217	851.62	74	853.37	785
18	852.39	330	852.37	323	852.37	286	852.60	242	855.46	2440	857.29	6360	853.37	785	852.46	357	852.04	203	851.83	131	851.58	65	853.23	705
19	852.62	421	852.33	308	852.33	290	852.44	168	855.37	2310	858.71	9470	854.29	1570	852.44	350	852.08	217	851.87	144	851.81	124	853.08	630
20	853.02	600	852.37	323	852.31	282	852.37	144	861.37	8620	860.87	17600	853.87	1160	852.44	350	852.00	189	851.77	112	851.83	131	853.12	650
21	853.14	660	852.34	312	852.52	361	852.64	238	856.50	4930	861.58	21070	853.73	1040	852.50	373	852.08	217	851.64	78	851.79	118	852.92	555
22	852.98	580	852.50	373	852.73	446	852.73	271	854.79	2200	861.71	21710	853.79	1090	852.50	373	852.12	231	851.73	101	851.94	168	852.75	476
23	852.79	494	852.50	373	852.48	346	852.73	271	854.58	1920	860.29	14940	853.79	1090	852.37	323	852.00	189	851.75	106	851.83	131	852.69	451
24	852.62	421	852.12	231	852.31	282	852.71	264	854.54	1870	858.58	9140	853.69	1010	852.31	301	851.96	175	851.83	131	851.71	95	852.54	389
25	852.62	421	852.04	203	852.87	510	852.77	286	855.12	2670	858.33	8520	853.62	955	852.33	308	852.00	189	851.81	124	851.75	106	852.50	373
26	852.60	413	852.37	323	852.48	327	852.60	224	858.73	9520	857.04	5890	853.39	800	852.42	342	852.12	231	851.78	115	852.02	196	852.67	442
27	852.52	381	852.35	316	852.31	264	852.50	189	855.87	3860	856.37	4710	853.21	695	852.62	421	852.12	231	851.75	106	851.96	175	852.46	357
28	852.52	381	852.31	301	852.17	214	852.77	286	855.92	3940	855.58	3380	853.10	640	853.17	675	852.12	231	851.60	69	851.94	168	852.42	342
29	852.64	429	852.29	293	852.25	242	852.73	271	.....	.....	855.71	3590	852.92	555	853.83	1130	852.12	231	851.73	101	851.96	175	852.39	330
30	853.00	590	852.33	308	852.27	249	852.75	278	.....	.....	857.04	5910	853.04	610	853.54	895	851.96	175	851.73	101	852.00	189	852.58	405
31	853.05	615	.....	.....	852.29	256	852.77	286	.....	.....	857.71	7190	.....	....	853.04	610	.....	.....	851.76	109	852.06	210	.....	....

Monthly Discharge of Grand River at Galt for year ending September 30th, 1918

Drainage Area, 1,360 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	660	203	369	.49	.15	.27	.31
November "	750	203	355	.55	.15	.26	.29
December "	510	182	284	.38	.13	.21	.24
January (1918)	373	131	250	.27	.10	.18	.21
February	9,520	161	2,154	7.00	.12	1.58	1.65
March	21,710	760	5,759	15.96	.56	4.23	4.88
April	9,570	555	1,875	7.04	.41	1.38	1.54
May	1,130	301	487	.83	.22	.36	.42
June	530	175	273	.39	.13	.20	.22
July	264	89	162	.19	.05	.12	.14
August	210	65	135	.15	.05	.10	.12
September	1,530	161	532	1.12	.12	.39	44
The year	21,710	69	1,047	15.96	.05	.77	10.45

Grand River at Glen Morris

Location—At the Glen Morris bridge, in the Village of Glen Morris, Township of South Dumfries, County of Brant.

Records Available—Discharge measurements from August, 1912. Daily gauge heights from July 21, 1913.

Drainage Area—1,390 square miles.

Gauge—Vertical steel staff 0 to 12 feet on the second pier from the left bank. Elevation of the zero of gauge is 801.00, which has remained unchanged since established.

Channel and Control—The channel is straight for 1,000 feet above and below the section. The bed of the river is composed of gravel and boulders, and banks are permanent. The bed and control is shifting under high water conditions.

Discharge Measurements—Made from bridge during the high water stages, and at permanent wading section located 150 feet upstream during the lower water periods.

Winter Flow—This section is seriously affected by ice which usually floods, forming as many as three or four layers of ice with water between them. Measurements are made during the winter months to determine the winter flow.

Regulation—This section is subject to fluctuations in the river stage, due to the storing of water, during the night and at week ends, by the Galt dam, located eight miles above.

Accuracy—Owing to poor natural conditions, the liability of the control to shift and back water caused by ice, the records cannot be considered better than fair.

Observer—Alfred Forbes, Glen Morris P.O.

Discharge Measurements of Grand River at Glen Morris in 1917-18

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 25....	Yeates, W.	272	463	.99	802.72	458	.....
Nov. 3....	"	273	534	1.43	803.00	761	.....
Dec. 6....	"	271	426	.82	802.60	348	.....
" 15....	"	210	245	1.44	803.27	353(a)	.....
1918							
Jan. 4....	"	130	80	.71	802.19	57(a)	.....
" 5....	"	153	95	.86	802.55	81(a)	.....
" 5....	" ..	158	106	1.01	803.23	106(a)	.....
Feb. 27....	" ...	303	1,222	4.07	805.29	4,978	.....
" 28....	"	300	1,117	3.75	804.96	4,189	.....
Mar. 1....	Roberts, E.	300	1,040	3.34	804.64	3,470	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of Grand River at Glen Morris for 1917-8

Drainage Area. 1,390 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	802.29	137	803.21	910	802.54	258	803.46	530	803.92	590	804.75	3720	806.12	7300	803.17	865	803.17	865	802.46	210	802.25	125	802.33	152
2	802.46	210	803.04	725	802.54	258	803.46	530	803.92	590	804.46	3080	806.62	8840	803.12	810	802.87	540	802.50	230	802.25	125	802.37	168
3	802.46	210	802 87	540	802.62	316	803.46	530	804.21	910	804.12	2380	806.54	8580	803.12	810	802.75	425	802.46	210	802.21	113	802.42	190
4	802.46	210	802.79	461	802.71	389	802.92	96	804.00	680	803.96	2080	805.04	4400	803.12	810	802.67	356	802.42	190	802.12	94	802.54	258
5	802.46	210	802.79	461	802.71	389	803.00	94	804.00	680	803.96	2080	804.46	3080	802.92	590	802.62	316	802.33	152	802.25	125	802.87	540
6	802.42	190	802.75	425	802.67	356	803.54	258	804.00	680	803.96	2080	803.92	2010	802.96	635	802.58	286	802.33	152	802.25	125	803.62	1490
7	802.33	152	802.71	389	802.71	237	803.67	356	803.92	590	803.87	1920	803.79	1770	803.00	680	802.54	258	802.21	113	802.21	113	803.17	865
8	802.42	190	802.71	389	802.87	215	803.46	210	803.79	461	803.75	1700	803.87	1920	802.96	635	802.50	230	802.33	152	802.17	104	802.96	635
9	802.42	190	802.67	356	803.37	443	803.89	560	803.96	530	803.58	1430	803.87	1920	802.92	590	802.50	230	802.25	125	802.17	104	802.87	540
10	802.42	190	802.67	356	803.42	490	803.42	190	804.12	590	803.42	1180	803.75	1700	802.92	590	802.50	230	802.25	125	802.33	152	802.71	389
11	802.42	190	802.54	258	803.46	530	803.42	190	804.29	670	803.25	960	803.75	1700	803.04	725	802.58	286	802.33	152	802.50	230	802.62	316
12	802.54	258	802.62	316	803.37	443	803.62	316	804.58	880	803.54	1360	803.50	1300	802.87	540	802.75	425	802.29	137	802.46	210	802.62	316
13	802.54	258	802.67	356	803.37	443	803.71	389	805.21	1160	804.67	3530	803.29	1010	802.92	590	802.96	635	802.25	125	802.29	137	803.37	1110
14	802.62	316	802.67	356	803.21	308	803.79	461	805.21	1320	805.46	5460	803.21	910	802.96	635	802.75	425	802.17	104	802.25	125	803.83	1840
15	802.71	389	802.67	356	803.21	308	803.75	425	806.92	2380	805.46	5460	803.21	910	803.04	725	802.62	316	802.29	137	802.25	125	803.29	1010
16	802.79	461	802.67	356	802.96	164	803.79	461	806.00	2150	805.17	4720	803.21	910	802.96	635	802.50	230	802.25	125	802.21	113	803.37	1110
17	802.71	389	802.62	316	802.87	131	803.75	425	805.96	2080	804.96	4200	803.25	960	802.87	540	802.54	258	802.25	125	802.21	113	803.37	1110
18	802.58	286	802.54	258	802.96	164	803.83	500	806.04	2230	805.50	5560	803.42	1180	802.79	461	802.50	230	802.25	125	802.08	88	803.21	910
19	802.71	389	802.54	258	803.00	180	803.83	500	806.17	2480	806.71	9130	803.83	1840	802.67	356	802.50	230	802.25	125	802.08	88	803.12	810
20	803.12	810	802.62	316	803.12	244	803.87	540	808.04	2620	808.62	16950	803.79	1770	802.71	389	802.42	190	802.25	125	802.21	113	803.04	725
21	803.17	865	802.62	316	803.21	308	803.96	635	805.21	2560	809.71	22760	803.62	1490	802.62	316	802.37	168	802.12	94	802.25	125	803.04	725
22	803.08	770	802.75	425	803.33	407	803.96	635	804.29	2320	810.08	24800	803.62	1490	802.58	286	802.37	168	802.21	113	802.25	125	802.96	635
23	802.96	635	802.87	540	803.46	530	804.08	770	804.08	2300	808.21	14960	803.58	1430	802.54	258	802.33	152	802.25	125	802.25	125	802.87	540
24	802.87	540	802.67	356	803.37	443	803.83	500	804.17	2480	807.21	10890	803.54	1360	802.54	258	802.33	152	802.25	125	802.21	113	802.71	389
25	802.79	461	802.67	356	804.08	1270	804.08	770	804.79	3810	806.58	8710	803.50	1300	802.54	258	802.33	152	802.25	125	802.17	104	802.71	389
26	802.75	425	802.79	461	803.92	1050	804.12	810	808.25	15140	806.12	7300	803.46	1240	802.71	389	802.33	152	802.25	125	802.25	125	802.71	389
27	802.75	425	802.79	461	803.96	1100	803.96	635	805.33	5120	804.96	4200	803.29	1010	802.83	500	802.33	152	802.21	113	802.25	125	802.83	500
28	802.75	425	802.71	389	803.67	755	804.04	725	805.12	4590	804.76	3740	803.12	810	803.25	960	802.33	152	802.04	84	802.33	152	802.71	389
29	802.79	461	802.79	461	803.67	755	804.04	725	.....	.....	804.83	3900	803.17	865	803.83	1840	802.29	137	802.17	104	802.37	168	802.54	258
30	803.04	725	802.54	258	803.33	407	803.96	635	.....	.....	805.71	6120	803.17	865	803.67	1570	802.25	125	802.25	125	802.37	168	802.67	355
31	803.21	910	.....	.....	803.37	443	803.92	590	.....	.....	806.50	8450	.....	....	803.37	1110	.....	....	802.25	125	802.37	168	.....	....

Monthly Discharge for Grand River at Glen Morris for year ending September 30th, 1918

Drainage Area, 1,390 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October (1917)	910	137	396	.65	.10	.28	.32
November "	910	258	406	.65	.19	.29	.32
December "	1,270	131	443	.91	.09	.32	.37
January .. (1918)	810	94	484	.58	.07	.35	.40
February	15,140	461	2,235	10.89	.33	1.61	1.68
March.....	24,800	960	6,284	17.84	.69	4.52	5.21
April.....	8,840	810	2,196	6.36	.58	1.58	1.76
May.....	1,840	258	657	1.32	.19	.47	.54
June	865	125	282	.62	.09	.20	.22
July.....	230	84	135	.17	.06	.10	.12
August.....	230	88	130	.17	.06	.09	.10
September.....	1,840	152	635	1.32	.11	.46	.51
The year.....	24,800	84	1,185	17.84	.06	.85	11.58

Grand River at York

Location—At the highway bridge in the Village of York, Township of Oneida, County of Haldimand.

Records Available—From June 25, 1913.

Drainage Area—2,280 square miles.

Gauge—Vertical steel staff 0 to 6 feet on the first pier from left abutment and 6 to 12 feet on the left abutment. The elevation of zero is 593.00, and has remained unchanged since established.

Channel and Control—Th flow is confined between the abutments of the bridge at all stages. The bed of the river is well protected, but shifting during flood stages. A partly demolished dam about 200 feet downstream affects flow, especially at low stages. Part of this old dam is washed out at each flood period.

Discharge Measurements—Taken from the highway bridge, and at a permanent low water section located 800 feet above during the low water period.

Floods—No floods of a serious nature have occurred here since the spring of 1912, when the dam below the bridge was wrecked, the water cutting around the right abutment, greatly increasing the width of the channel. Village residents state the water rose to a gauge height of 606 feet, which would mean approximately 100,000 second feet.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice, and measurements are made to determine the winter flow.

Regulation—The nearest dam is at Caledonia, five miles above. The intermittent operation of the mills causes daily fluctuations in the gauge heights.

Accuracy—The conditions of flow are good, except for the fluctuations caused through the Caledonia Mills. Well-defined rating curves have been established, and the records can be considered good. Semi-daily gauge heights will not give a good representative mean.

Observer—Harry Brown, York P.O.

Discharge Measurements of Grand River at York in 1917-18

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 11....	Yeates, W.	338	1,018	.53	593.48	534	.....
" 12....	"	338	1,018	.54	593.47	547	.....
Nov. 1....	"	338	1,140	.68	593.81	780	.....
Dec. 4....	"	338	1,119	.71	593.77	799	.....
1918							
Jan. 8....	Roberts, E.....	246	697	.53	593.75	366(a)	.....
Feb. 9....	Yeates, W.....	307	627	.57	594.08	359(a)	.....
Mar. 21....	Roberts, E.....	400	3,646	7.91	600.50	28,865	.....
" 23....	"	400	3,606	7.02	600.29	25,307	.....
" 23....	"	400	3,519	6.92	600.08	24,357	.....
" 24....	"	400	3,006	5.49	598.83	16,498	.....
" 24....	"	400	3,006	5.46	598.81	16,421	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of Grand River at York for 1917-18

Drainage Area, 2,280 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	593.37	475	594.39	1500	593.75	745	593.64	460	594.14	382	602.17	11510	596.92	8200	594.37	1480	594.33	1420	593.44	515	593.08	364	593.06	358
2	593.39	485	594.33	1420	593.92	910	593.77	500	594.08	364	601.46	11300	597.58	10800	594.35	1440	594.19	1220	593.44	515	593.08	364	593.06	358
3	593.39	485	594.14	1150	593.73	725	593.83	510	593.81	302	600.67	11090	597.62	10960	594.06	1060	594.10	1100	593.37	475	593.06	358	593.21	404
4	593.46	525	594.04	1030	593.83	820	593.87	530	594.00	340	600.08	10550	596.62	7100	594.19	1220	593.98	970	593.33	455	593.00	340	593.27	428
5	593.48	540	594.02	1010	593.87	860	593.71	424	594.10	370	600.08	10470	596.12	5420	594.14	1150	593.89	880	593.31	445	592.96	332	593.37	475
6	593.46	525	593.98	970	593.89	880	593.67	391	594.12	376	599.96	10220	595.56	3840	594.14	1150	593.83	820	593.37	475	592.92	324	593.79	780
7	593.37	475	593.89	880	593.96	950	593.71	388	594.19	397	599.64	9860	595.25	3100	594.14	1150	583.83	820	593.35	465	592.83	366	594.46	1620
8	593.50	550	593.92	910	593.92	910	593.69	367	593.92	324	599.08	9820	595.14	2850	594.17	1190	593.81	800	593.31	445	593.00	340	594.44	1580
9	593.54	580	593.92	910	593.75	700	593.67	346	594.12	358	598.71	9660	595.00	2550	594.08	1080	593.62	635	593.31	445	593.02	346	594.35	1440
10	593.52	565	593.81	800	594.12	1070	593.58	326	593.96	332	598.25	9460	594.83	2230	594.12	1130	593.69	690	593.33	455	593.06	358	593.89	880
11	593.54	580	593.67	675	594.17	1130	593.62	324	594.10	370	598.21	9310	594.73	2060	594.08	1080	593.64	650	593.35	465	592.96	332	593.77	765
12	592.42	500	593.79	780	594.08	1020	593.48	296	594.46	424	598.42	10140	594.62	1870	594.00	990	593.64	650	593.35	465	593.21	404	593.64	650
13	593.44	515	593.75	745	594.12	1070	593.44	278	595.87	475	598.96	12420	594.48	1650	594.23	1270	593.71	710	593.37	475	593.35	465	593.67	675
14	593.48	540	593.77	765	594.08	1020	593.58	306	596.81	1380	601.69	13460	594.42	1550	594.31	1380	593.64	650	593.35	465	593.33	455	594.62	1870
15	593.50	550	593.75	745	594.10	990	593.71	322	598.79	4440	602.92	17110	594.39	1500	594.21	1240	593.71	710	593.31	445	593.35	465	595.06	2680
16	593.67	675	593.75	745	593.71	630	593.75	330	598.98	4990	603.00	17560	594.31	1380	594.17	1190	593.75	745	593.35	465	593.31	445	594.71	2030
17	593.75	745	593.75	745	593.83	725	593.79	328	598.89	4720	601.29	13930	594.33	1420	594.17	1190	593.79	780	593.33	455	593.17	391	594.71	2030
18	593.71	710	593.64	650	593.79	690	593.77	324	598.46	6540	597.58	10800	594.79	2160	594.17	1190	593.81	800	593.23	412	593.12	376	594.60	1840
19	593.81	800	593.75	745	593.77	675	593.80	320	597.67	7280	598.00	12600	595.12	2800	593.96	950	593.64	650	593.29	436	593.08	364	594.56	1780
20	593.77	765	593.75	745	593.81	710	593.77	314	603.83	11850	600.08	25190	595.17	2910	593.89	880	593.60	620	593.29	436	593.08	364	594.35	1440
21	594.23	1270	593.71	710	593.83	685	593.83	316	605.67	15790	600.50	28740	594.98	2510	593.83	820	593.56	590	593.25	420	593.17	391	594.29	1360
22	594.37	1480	593.73	725	594.00	840	594.12	376	602.71	11340	600.54	29080	594.87	2310	593.77	765	593.52	565	593.19	397	593.06	358	594.21	1240
23	594.12	1130	593.83	820	593.96	800	594.06	358	601.92	10140	600.46	28400	594.83	2230	593.48	540	593.29	436	593.17	391	593.02	346	593.98	970
24	594.10	1100	593.92	910	594.08	920	594.00	340	601.08	8800	598.83	16620	594.79	2160	593.40	490	593.44	515	593.14	382	592.96	332	593.94	930
25	594.00	990	593.83	820	594.14	980	594.08	364	600.85	7940	597.83	11850	594.71	2030	593.46	525	593.44	515	593.08	364	592.83	306	593.87	860
26	593.94	930	593.83	820	594.17	1010	594.17	391	602.96	12420	597.42	10140	594.69	1990	593.67	675	593.42	500	593.10	370	592.98	331	593.85	840
27	593.87	860	593.79	780	594.21	1000	593.85	310	604.50	14950	596.58	6960	594.54	1740	594.00	990	593.42	500	593.19	397	593.02	346	593.79	780
28	593.85	840	593.71	710	594.12	910	594.00	340	602.92	12240	596.21	5710	594.39	1500	594.14	1150	593.42	500	593.19	397	593.06	358	593.79	780
29	593.94	930	593.79	780	594.14	880	594.00	340	.....	.....	596.00	5050	594.35	1440	594.37	1480	593.39	485	593.06	358	593.17	391	593.64	650
30	594.42	1550	593.79	780	593.79	580	594.17	391	.....	.....	596.12	5420	594.33	1420	594.73	2060	593.44	515	593.06	358	593.21	404	593.69	690
31	594.33	1420	.....	.....	593.83	570	594.14	382	.....	.....	596.67	7280	.....	.....	594.54	1740	.....	.....	593.08	364	593.33	455	.....	.....

Monthly Discharge of Grand River at York for year ending September 30th, 1918

Drainage Area, 2,280 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October. (1917)	1,550	475	777	.68	.21	.34	.39
November "	1,500	650	859	.66	.29	.38	.42
December "	1,130	570	852	.50	.25	.37	.43
January (1918)	530	278	364	.23	.12	.16	.18
February	15,790	302	4,987	6.93	.13	2.19	2.28
March	29,080	5,050	12,958	12.75	2.21	5.68	6.55
April	10,960	1,380	3,189	4.81	.61	1.40	1.56
May	2,060	490	1,118	.90	.21	.49	.56
June	1,420	436	714	.62	.19	.31	.35
July	515	358	432	.23	.16	.19	.22
August	465	306	371	.20	.13	.16	.18
September	2,680	358	1,106	1.18	.16	.49	.55
The year	29,080	278	22.98	12.75	.12	1.01	13.68

Speed River at Hespeler

Location—At a point 100 feet below the jail, which adjoins the power house, in the Town of Hespeler, Township of Waterloo, County of Waterloo.

Records Available—Discharge measurements from July 10, 1913. Daily gauge heights from October 23, 1913.

Drainage Area—250 square miles.

Gauge—Vertical steel staff 0 to 12 feet on jail wall adjoining power house. The elevation of zero of the gauge is 935.00.

Channel and Control—Straight for about 300 feet above and below the gauging section. Loose gravel forms the bed of this stream, which is decidedly shifting. The banks are low, and overflow when the water rises 2 feet above normal. Weeds at the control and in channel have a decided effect at the gauging section.

Discharge Measurements—Made from a permanent wading section 100 feet below the gauge during the low stages, and the dam 400 feet above will be used as a weir during the flood season.

Winter Flow—The relation of gauge height to discharge is somewhat affected by the presence of ice for a short period during the winter season.

Regulation—A dam 400 ft. above this section causes serious fluctuations in the river stage during the low water period.

Accuracy—Owing to the shifting bed and the presence of weeds at and below section, greatly interfering with the metering of stream, these records can only be classed as fair.

Discharge Measurements of Speed River at Hespeler in 1917-18

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
1917							
Oct. 26....	Yeates, W	95	106	1.27	936.55	134	.....
Nov. 3....	"	95	111	1.38	936.64	153	.....
Dec. 8....	"	94	71	.78	936.17	55	.....
1918							
Jan. 4....	"	95	62	.78	936.34	48 (a)	.....
Feb. 11....	"	95	76	.88	937.08	67 (a)	.....
Mar. 15....	Roberts, E....	123	265	2.80	938.12	743 (b)	.....

(a) Ice measurement.

(b) Ice jam below section.

Daily Gauge Height and Discharge of Speed River at Hespeler for 1917-18

Drainage Area, 250 Square Miles

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	936.35	109	936.64	176	936.29	87	936.19	50	936.79	57	938.25	433	938.25	1030	936.60	164	936.44	126	936.17	85	936.12	79	936.33	105
2	936.35	109	936.62	170	936.21	78	936.06	47	936.81	58	938.04	378	938 67	1320	936.56	154	936.33	105	936.21	89	936.12	79	936.33	105
3	936.37	113	936.62	170	936.31	78	936.21	48	936.79	57	937.87	344	938.50	1200	936.54	148	936.35	109	936.23	92	936.12	79	936.35	109
4	936.31	102	936.52	143	936.31	78	936.12	46	936.87	60	937.67	297	938.00	870	936.54	148	936.35	109	936.25	94	935.92	63	936.46	130
5	936.29	99	936.60	164	936.31	78	936.12	46	936.87	60	937.37	218	937.62	635	936.52	143	936.33	105	936.25	94	936.12	79	936.60	164
6	936.31	102	936.54	148	936.31	69	936.14	46	936.89	62	937.29	225	937.56	600	936.52	143	936.33	105	936.23	92	936.14	81	936.64	176
7	936.31	102	936.44	126	936.33	71	936.25	48	936.92	63	937.29	263	937.33	474	936.56	154	936.35	109	936.08	75	936.18	86	936.64	176
8	936.42	122	936.44	126	936.33	64	936.29	48	936.92	63	937.04	208	937.21	413	936.54	148	936.33	105	936.25	94	936.18	86	936.54	148
9	936.42	122	936.31	102	936.23	58	936.25	48	936.94	64	937.12	236	937.04	329	936.54	148	936.21	89	936.25	94	936.19	87	936.60	164
10	936.44	126	936.44	126	936.31	63	936.27	48	936.83	58	937.25	288	937.06	339	936.52	143	936.29	99	936.19	87	936.14	81	936.50	138
11	936.44	126	936.35	109	936.39	64	936.64	55	936.87	56	937.17	255	937.08	348	936.52	143	936.29	99	936.21	89	936.00	68	936.50	138
12	936.46	130	936.42	122	936.29	62	937.21	89	937.12	70	937.17	255	937.00	310	936.39	116	936.33	105	936.23	92	936.14	81	936.50	138
13	936.50	138	936.44	126	936.27	60	936.75	55	937.31	89	937.58	448	936.67	185	936.46	130	936.32	104	936.21	89	936.17	85	936.52	143
14	936.37	113	936.37	113	936.19	57	937.23	92	937.50	118	938.35	900	936.58	159	936.48	134	936.32	104	936.04	72	936.17	85	936.56	154
15	936.48	134	936.39	116	936.12	54	936.98	67	938.29	403	938.10	745	936.85	248	936.46	130	936.29	99	936.19	87	936.19	87	936.60	164
16	936.46	130	936.37	113	936.21	58	936.96	66	938.50	510	938.08	825	936.77	218	936.50	138	936.04	72	936.21	89	936.12	79	936.58	159
17	936.42	122	936.35	109	936.21	58	936.83	58	938.08	301	938.08	920	936.83	240	936.50	138	936.23	92	936.21	89	936.14	81	936.56	154
18	936.48	134	936.25	94	936.21	58	936.81	58	937.87	218	938.96	1540	936.81	232	936.46	130	936.23	92	936.25	94	936.12	79	936.58	159
19	936.48	134	936.31	102	936.25	60	936.87	60	937.87	218	939.29	1790	936.81	232	936.21	89	936.23	92	936.23	92	936.19	87	936.64	176
20	936.71	197	936.33	105	936.29	62	937,00	68	938.80	685	940.04	2350	936.85	248	936.39	116	936.27	96	936.23	92	936.18	86	936.58	159
21	936.75	211	936.33	105	936.31	63	937.04	72	941.87	1470	940.83	2940	937.00	310	936 27	96	936.23	92	936.06	73	936.14	81	936.58	159
22	936.73	204	936.31	102	936.25	60	937.06	73	940.54	1230	939.83	2190	936.98	301	936.35	109	936.25	94	936.27	96	936.19	87	936.44	126
23	936.64	176	936.44	116	936.21	58	936.79	57	939.42	1080	939.92	2260	936.85	248	936.29	99	936.06	73	936.25	94	936.21	89	936.50	138
24	936.56	154	936.52	132	936.29	62	936.81	58	938.75	655	939.12	1660	936.89	263	936.27	96	936.17	85	936.23	92	936.23	92	936.50	138
25	936.52	143	936.46	120	936.21	58	936.81	58	938.33	423	938.71	1350	936.87	255	936.25	94	936.19	87	936.21	89	936.08	75	936.46	130
26	936.52	143	936.33	92	936.21	58	936.81	58	939.54	590	939.54	1980	936.79	225	936.33	105	936.19	87	936.21	89	936.27	96	936.46	130
27	936.56	154	936.31	89	936.21	53	936.89	62	939.37	496	939.37	1850	936.71	197	936.50	138	936.21	89	936.17	85	936.27	96	936.46	130
28	936.52	143	936.37	96	936.21	53	936.89	62	937.83	204	938.83	1440	936.69	191	936.48	134	936.21	89	936.12	79	936.27	96	936.46	130
29	936.54	148	936.37	96	936.19	53	936.85	60	.....	.....	938.02	885	936.60	164	936.48	134	936.21	89	936.14	81	936.30	100	936.46	130
30	936.77	218	936.35	94	936.19	50	936.83	58	.....	.....	937.75	715	936.64	176	936.48	134	936.02	70	936.17	85	936.29	99	936.52	143
31	936.79	225	.....	.....	936.17	49	936.83	58	.....	.....	937.77	725	.....	.....	936.44	126	.....	.....	936.17	85	936.29	99	.....	....

Monthly Discharge of Speed River at Hespeler for year ending September 30th, 1918

Drainage Area, 250 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
October .. (1917)	225	99	141	.90	.40	.56	.65
November "	176	89	120	.70	.36	.48	.54
December "	87	49	62	.35	.20	.25	.29
January (1918)	92	46	59	.37	.18	.24	.28
February	1,470	56	336	5.88	.22	1.34	1.39
March.....	2,940	208	997	11.76	.83	3.99	4.60
April	1,320	159	399	5.28	.64	1.60	1.79
May.....	164	89	130	.66	.36	.52	.60
June	126	70	96	.50	.28	.38	.42
July.....	96	72	88	.38	.29	.35	.40
August.....	100	63	85	.40	.25	.34	.39
September.....	176	105	144	.70	.42	.58	.65
The year	2,940	46	221	11.76	.18	.88	12.00

Table Showing Run-Off as Per Cent. Precipitation

1917-18

River	Location	District	Precipitation Station	Inches Precip'n	Inches Run-Off	%
Black	Washago	Eastern Ont.	Kinmount	28.57	14.59	51.1
Bonnechere	Renfrew	"	Renfrew	29.03	6.38	22.0
Madawaska	Madawaska	"	Madawaska	32.76	10.37	31.6
Maganatewan, N.	Burk's Falls	"	Emsdale	34.99	19.15	54.8
" S.	"	"	"	34.99	17.06	48.8
Mississippi	Ferguson's Falls	"	Westport	33.01	14.00	42.4
"	Galetta	"	Almonte	34.52	10.70	31.0
"	Snow Road	"	Westport	33.01	15.19	46.0
Moira	Foxboro'	"	Queensboro'	28.25	11.89	42.1
Muskoka, S	Black's Bridge	"	Beatrice	36.12	14.73	40.8
" N	Port Sydney	"	"	36.12	14.06	38.9
Napanee	Napanee	"	Westport	33.01	15.47	46.9
Petawawa	Petawawa	"	Pembroke	32.30	8.65	26.8
Tay	Glen Tay	"	Westport	33.01	15.57	47.2
York	Bancroft	"	Madawaska	39.55	12.62	31.9
aux Sables	Massey	Northern Ont.	Turbine	24.93	15.56	62.4
Blanche	Englehart	"	Haileybury	32.84	18.88	57.5
Frederickhouse	Frederickhouse	"	WawiatanFalls	34.36	17.50	50.9
Kapuskasing	Kapuskasing	"	"	17.85	9.84	55.1
Mississagi	Iron Bridge	"	Turbine	32.20	13.03	40.5
South	Powassan	"	Rutherglen	29.78	15.75	52.9
Spanish	Webbwood	"	Turbine	32.20	11.40	35.4
Sturgeon	Smoky Falls	"	Sturgeon Falls	26.05	14.28	54.8
Eagle	Eagle River	Northwest'n Ont.	Kenora	23.59	5.06	21.4
English	Ear Falls	"	Lac Seul	23.31	7.03	30.2
"	Manitou Falls	"	"	23.31	6.77	29.0
"	Oak Falls	"	"	23.31	6.78	29.1
"	Pine Ridge	"	"	20.44	6.46	31.6
Turtle	Mt. Rapids	"	Mine Centre	22.93	6.83	29.8
Wabigoon	Quibell	"	Dryden	13.89	3.28	23.6
Grand	Belwood	Grand R. B'n.	Alton	30.07	11.25	37.4
"	Brantford	"	Alton, Elora, Paris	31.13	15.30	49.2
"	Conestogo	"	Elora	31.30	8.09	25.8
"	Galt	"	"	31.30	10.45	33.4
"	Glen Morris	"	Alton, Elora	30.69	11.58	37.7
"	York	"	Alton, Elora, Paris	31.13	13.68	43.9
Speed	Hespeler	"	Elora, Georgetown	31.29	12.00	38.4
Beaver	Kimberley	Southwest'n Ont.	Eugenia	38.81	15.20	39.2
Credit	Cataract Jct.	"	Alton	30.07	15.18	50.5
Rocky Saugeen	Markdale	"	Markdale	24.69	15.56	63.0
Saugeen	Port Elgin	"	Mt. Forest	33.76	14.38	42.6
"	Walkerton	"	"	33.76	13.36	39.6
Sydenham	Owen Sound	"	Markdale	24.69	17.78	72.0
Thames	Kilworth	"	Woodstock, London, Stratford	36.46	12.38	34.0
"	Fanshawe	"	Stratford	37.09	7.29	19.7
"	Ealing	"	Woodstock	34.93	10.89	31.2

Miscellaneous Measurements

River	Location	Date	Discharge in Sec-ft.	
Bighead	Meaford	Oct. 17, 1917	10	
"	"	Nov. 17, 1917	28	
"	"	Nov. 24, 1917	58	(a)
"	"	Dec. 20, 1917	91	(a)
"	"	Jan. 18, 1918	34	(a)
"	"	Feb. 13, 1918	76	(a)
"	"	Mar. 23, 1918	1,470	
"	"	Apr. 4, 1918	664	
"	"	Apr. 10, 1918	274	
"	"	May 3, 1918	159	
"	"	July 7, 1918	13	
Madawaska	Claybank	Nov. 21, 1917	1,148	
"	"	Apr. 19, 1918	9,162	
"	"	May 22, 1918	5,413	
"	"	Sept. 23, 1918	2,071	
Mississippi	Appleton	Sept. 24, 1918	609	
Nith	Canning	Nov. 1, 1917	302	
"	"	Dec. 3, 1917	190	(a)
"	"	Dec. 26, 1917	191	(a)
Nottawasaga	Nicolston	Nov. 12, 1917	131	
"	"	Dec. 21, 1917	136	(a)
Seguin	Parry Sound	Nov. 25, 1917	146	(b)
"	"	Dec. 16, 1917	237	(b)
Seine	Skunk Rapids	Nov. 12, 1917	1,019	

(a) Ice measurement.
(b) Ice at edges of section.

NORTH-WESTERN ONTARIO DISTRICT

Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations in the North-Western Ontario District for which such data are available in this report

Station	Drainage Area Sq. miles	1917			1918									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year.
Eagle River at Eagle River	970	.26	.28	.29	.30	.29	.29	.35	.54	.59	.53	.46	.31	.37
English River at Ear Falls	11,700	.57	.53	.48	.42	.37	.34	.35	.50	.63	.68	.70	.63	.52
English River at Manitou Falls	14,600	.55	.51	.47	.41	.36	.32	.34	.49	.61	.65	.66	.61	.50
English River at Oak Falls	15,570	.54	.50	.46	.41	.37	.34	.35	.48	.61	.65	.67	.61	.50
English River at Pine Ridge	.....	.....	.52	.48	.43	.38	.34	.35	.52	.64	.72	.71	.64	.52
Turtle River at Mountain Rapids	1,760	.55	.48	.21	.08	.05	.07	.50	.91	1.01	.77	.80	.59	.50
Wabigoon River near Quibell	2,400	.28	.....	.....	.....	.....	.....	.....	.76	.70	.47	.38	.27	.48

NORTHERN ONTARIO DISTRICT

Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations in the Northern Ontario District for which such data are available in this report.

Station	Drainage Area Sq. miles	1917			1918									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year
aux Sables River near Massey	524	.47	.51	.41	.....	.....	.....	2.80	3.10	2.97	2.42	.54	.47	1.52
Blanche River near Englehart	430	1.01	.66	.34	.30	.24	.40	3.47	4.23	1.48	1.69	.77	2.05	1.39
Frederickhouse River at Frederickhouse	1,260	.89	.68	.55	.36	.25	.36	1.28	4.70	2.85	1.96	.33	1.24	1.29
Kapuskasing River at Kapuskasing	2,820	.....	.....	.....	.....	.....	.....	.....	3.37	2.04	2.21	.38	.66	1.73
Mississagi River at Iron Bridge	3,565	.44	.58	.39	.33	.31	.42	1.40	3.11	2.19	1.20	.54	.58	.96
South River near Powassan	294	1.33	1.24	.71	.43	.35	1.13	3.88	2.36	1.03	.51	.34	.58	1.16
Spanish River near Webbwood	4,340	.55	.50	.48	.43	.45	.58	2.08	1.68	1.16	1.01	.68	.56	.84
Sturgeon River near Smoky Falls	2,570	.76	.70	.64	.60	.56	.58	1.92	2.62	1.26	1.14	.88	.95	1.05

EASTERN ONTARIO DISTRICT

Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations in Eastern Ontario District for which such data are available in this report

Station	Drainage Area Sq. miles	1917			1918									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Year.
Black River near Washago	585	.50	.77	.50	.28	.23	1.92	4.88	1.77	1.04	.39	.20	.43	1.08
Bonnechere River at Renfrew	910	.32	.32	.23	.32	.39	.43	1.36	.75	.58	.35	.34	.29	.47
Madawaska River at Madawaska	800	.35	.32	.28	.....	.....	.40	2.00	1.80	.84	.54	.42	.69	.76
Maganatewan River (North Branch) near Burk's Falls	107	1.22	1.37	.70	.41	.33	1.27	5.56	3.06	1.27	.62	.38	.72	1.41
Maganatewan River (South Branch) near Burk's Falls	257	.42	.71	.70	.64	.46	.98	4.27	3.05	1.63	.74	.86	.62	1.26
Mississippi River at Ferguson's Falls	1,042	.36	.52	.36	.41	.64	1.53	4.64	1.82	.61	.60	.37	.53	1.03
Mississippi River at Galetta	1,456	.33	.45	.31	.24	.35	1.16	3.88	1.23	.38	.35	.34	.39	.79
Mississippi River near Snow Road	446	.50	.58	.49	.59	.78	1.00	4.14	1.97	.70	.86	.84	1.01	1.12
Moira River near Foxboro'	1,038	.13	.63	.21	.07	.14	2.27	4.43	1.26	.59	.39	.16	.22	.88
Muskoka River (South Branch) at Black's Bridge	668	.46	.59	1.14	.42	.49	.62	2.34	2.30	2.19	1.33	.51	.63	1.09
Muskoka River (North Branch) near Port Sydney	560	.51	.85	.83	.41	.45	1.26	3.71	2.42	.80	.47	.38	.34	1.04
Napanee River near Napanee	300	.42	.65	.43	.23	.43	3.40	5.36	1.07	.66	.50	.18	.33	1.14
Petawawa River near Petawawa	1,572	.34	.37	.34	.32	.30	.31	1.17	1.56	1.29	.80	.45	.37	.64
Tay River near Glen Tay	204	.73	.78	.78	.31	.83	3.08	2.36	.89	.92	1.05	.91	1.14	1.15
York River near Bancroft	374	.45	.57	.92	.42	.45	.58	2.09	1.44	.94	1.39	1.09	.97	.93

SOUTH-WESTERN ONTARIO DISTRICT

GRAND RIVER BASIN

Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations on Grand River and tributaries for which such data are available in this report

Station	Drainage Area Sq. miles	1917			1918									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Year
Grand River at Belwood	280	.09	.09	.05	.01	.54	6.53	1.81	.36	.11	.02	.01	.25	.83
Grand River at Brantford	2,000	.27	.32	.28	.13	2.81	6.95	1.47	.43	.25	.12	.10	.50	1.13
Grand River near Conestogo	550	.17	.16	.20	.05	.31	4.00	1.43	.29	.13	.05	.05	.27	.60
Grand River at Galt	1,360	.27	.26	.21	.18	1.58	4.23	1.38	.36	.20	.12	.10	.39	.77
Grand River at Glen Morris	1,390	.28	.29	.32	.40	1.61	4.52	1.58	.47	.20	.10	.09	.46	.85
Grand River at York	2,280	.34	.38	.37	.16	2.19	5.68	1.40	.49	.31	.19	.16	.49	1.01
Speed River at Hespeler	250	.56	.48	.25	.24	1.34	3.99	1.60	.52	.38	.35	.34	.58	.88

SOUTH-WESTERN ONTARIO DISTRICT

Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations in South-Western Ontario District for which such data are available in this report

Station	Drainage Area Sq. miles	1917			1918									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year.
Beaver River near Kimberley	100	.93	.88	.90	.87	.91	1.35	3.03	1.28	.82	.78	.82	.87	1.12
Credit River at Cataract Junction	85	.39	.34	.34	1.13	3.39	5.29	.96	.48	.32	.24	.24	.36	1.12
Rocky Saugeen River near Markdale	96	.82	.70	.74	.56	1.00	2.55	2.93	1.46	1.03	.68	.60	.72	1.15
Saugeen River near Port Elgin	1,565	.59	.57	.66	.31	.76	4.33	2.82	1.02	.55	.33	.25	.49	1.06
Saugeen River near Walkerton	850	.55	.45	.34	.33	.87	3.97	2.79	1.00	.54	.28	.20	.49	.98
Sydenham River near Owen Sound	71	.58	.66	.72	1.83	1.07	4.96	3.41	1.15	.55	.32	.23	.27	1.31
Thames River (Main Stream) at Kilworth	1,270	.40	.40	.53	.65	1.61	5.07	1.04	.53	.28	.10	.04	.32	.91
Thames River (North Branch) near Fanshawe	585	.17	.25	.28	.13	.25	3.78	.89	.12	.09	.04	.04	.12	.54
Thames River (South Branch) near Ealing	515	.52	.56	.41	.23	1.94	4.03	.88	.48	.22	.07	.05	.31	.80

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